

**The World Markets
and
Manufacturers of High Voltage
Switchgear
2010 - 2020**

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CONTENTS

1. INTRODUCTION.....	1
1.1 OBJECTIVES AND SCOPE	1
1.2 METHODOLOGY.....	3
2. SUMMARY	5
2.1 SUMMARY TABLES.....	7
3. THE WORLD MARKET.....	13
3.1 FORECAST WORLD MARKET 2011 - 2020.....	21
4. MAJOR HIGH VOLTAGE SWITCHGEAR MANUFACTURERS.....	23
4.1 HV SWITCHGEAR INDUSTRY CONTACT DETAILS	27
4.2 Argentina.....	27
4.3 Australia.....	27
4.4 Austria.....	29
4.5 Belgium.....	30
4.6 Bosnia-Herzegovina.....	31
4.7 Brazil.....	31
4.8 Bulgaria.....	34
4.9 Canada.....	34
4.10 Chile.....	36
4.11 China.....	37
4.12 Colombia.....	42
4.13 Croatia.....	43
4.14 Czech Republic	43
4.15 Denmark.....	44
4.16 Egypt.....	45
4.17 Estonia.....	46
4.18 Finland	46
4.19 France.....	47
4.20 Germany.....	49
4.21 Greece	53
4.22 Hungary.....	54
4.23 India	55
4.24 Indonesia	60
4.25 Iran	61
4.26 Ireland	61
4.27 Israel.....	62
4.28 Italy	62
4.29 Japan	65
4.30 Malaysia.....	68
4.31 Mexico	69
4.32 Morocco	71
4.33 Netherlands	72
4.34 New Zealand	73
4.35 Norway.....	73
4.36 Pakistan	74
4.37 Peru	74
4.38 Philippines.....	74
4.39 Poland	75
4.40 Portugal	76
4.41 Romania	77

4.42	Russia.....	77
4.43	Saudi Arabia.....	78
4.44	Serbia & Montenegro.....	79
4.45	Slovakia.....	79
4.46	Slovenia.....	80
4.47	South Africa.....	80
4.48	South Korea.....	81
4.49	Spain.....	82
4.50	Sweden.....	84
4.51	Switzerland.....	85
4.52	Taiwan.....	89
4.53	Thailand.....	90
4.54	Tunisia.....	91
4.55	Turkey.....	92
4.56	UAE.....	93
4.57	Ukraine.....	94
4.58	United Kingdom.....	94
4.59	USA.....	101
5.	REGIONAL MARKETS.....	109
5.1	WESTERN EUROPE.....	109
5.2	EASTERN EUROPE.....	119
5.3	FORMER SOVIET UNION.....	129
5.4	NORTH AFRICA.....	139
5.5	WEST AFRICA.....	143
5.6	CENTRAL AFRICA.....	152
5.7	EAST AFRICA.....	157
5.8	SOUTHERN AFRICA.....	166
5.9	MIDDLE EAST.....	171
5.10	SOUTH ASIA.....	181
5.11	FAR EAST.....	187
5.12	SOUTH AMERICA.....	197
5.13	CENTRAL AMERICA AND CARIBBEAN.....	207
5.14	NORTH AMERICA.....	217
5.15	OCEANIA.....	223
	PRODUCTION.....	229
6.	TRADE ANALYSIS.....	231
6.1	TOP 25 EXPORTERS.....	231
6.2	TOP 25 IMPORTERS.....	239
6.3	EXPORT VALUES.....	247
6.4	EXPORT PERCENTAGES.....	255
6.5	IMPORT VALUES.....	263
6.6	IMPORT VALUES.....	270
6.6.1	<i>HV Switchgear Imports by Country Alphabetical 2009.....</i>	<i>270</i>
6.6.2	<i>HV Switchgear Imports by Region, by Country 2005 to 2009.....</i>	<i>315</i>
7.	APPENDICES.....	329
7.1	BACKGROUND COUNTRY INFORMATION.....	329
7.1.1	<i>Europe.....</i>	<i>329</i>
7.1.2	<i>Africa.....</i>	<i>331</i>
7.1.3	<i>Asia.....</i>	<i>333</i>
7.1.4	<i>South America.....</i>	<i>335</i>
7.1.5	<i>North and Central America and Caribbean.....</i>	<i>336</i>
7.1.6	<i>Oceania.....</i>	<i>338</i>
7.2	EXCHANGE RATES.....	339
7.3	ESTIMATED PRODUCTION BY COMPANY BY COUNTRY.....	340

TABLE OF TABLES

1. INTRODUCTION.....	1
1.1 OBJECTIVES AND SCOPE	1
1.2 METHODOLOGY.....	3
2. SUMMARY	5
2.1 SUMMARY TABLES.....	7
The Fastest Growing National Markets for HV Switchgear 2005 - 2010 (US\$ Million).....	7
The Fastest Growing National Markets for HV Switchgear 2008 - 2010 (US\$ Million).....	8
The Fastest Declining National Markets for HV Switchgear 2005 - 2010 (US\$ Million)	9
The Fastest Declining National Markets for HV Switchgear 2008 - 2010 (US\$ Million)	10
The Largest National Markets for HV Switchgear 2020 (US\$ Million).....	11
3. THE WORLD MARKET.....	13
The World Market for HV Switchgear, by Region, 2005- 2010 (US\$ Million)	13
The World Market for HV Switchgear, by Region, 2005 - 2010 (% Change).....	14
The World Market for HV Switchgear, by Region, by Equipment Type 2010 (US\$ Million)	15
The World Market for HV Switchgear, by Region, by Voltage Level 2010 (US\$ Million)	16
The World Market for HV Distribution Switchgear, by Region, by Location 2010 (US\$ Million)	17
The World Market for HV Switchgear, by Region, by Type of Use 2010 (US\$ Million)	18
The World Market for HV Switchgear, by Region, by End Use Customer 2010 (US\$ Million).....	19
3.1 FORECAST WORLD MARKET 2011 - 2020.....	21
The Forecast World Market for HV Switchgear, by Region, 2011 to 2020 (US\$ Million)	21
The Forecast World Market for HV Switchgear, by Region, 2011 to 2020 (% Change).....	22
4. MAJOR HIGH VOLTAGE SWITCHGEAR MANUFACTURERS.....	23
Leading Manufacturers' Sales of HV Switchgear 2010 (US\$ Million)	23
Leading Manufacturers' Sales of HV Switchgear, per Region, 2010 (US\$ Million) - continued	25
4.1 HV SWITCHGEAR INDUSTRY CONTACT DETAILS	27
4.2 Argentina.....	27
4.3 Australia.....	27
4.4 Austria.....	29
4.5 Belgium.....	30
4.6 Bosnia-Herzegovina.....	31
4.7 Brazil.....	31
4.8 Bulgaria.....	34
4.9 Canada.....	34
4.10 Chile.....	36
4.11 China.....	37
4.12 Colombia.....	42
4.13 Croatia.....	43
4.14 Czech Republic	43
4.15 Denmark.....	44
4.16 Egypt.....	45
4.17 Estonia.....	46
4.18 Finland	46
4.19 France.....	47
4.20 Germany.....	49
4.21 Greece	53
4.22 Hungary.....	54
4.23 India	55
4.24 Indonesia	60
4.25 Iran	61
4.26 Ireland	61
4.27 Israel.....	62
4.28 Italy	62
4.29 Japan	65

4.30	Malaysia	68
4.31	Mexico	69
4.32	Morocco	71
4.33	Netherlands	72
4.34	New Zealand	73
4.35	Norway.....	73
4.36	Pakistan	74
4.37	Peru	74
4.38	Philippines.....	74
4.39	Poland	75
4.40	Portugal	76
4.41	Romania	77
4.42	Russia.....	77
4.43	Saudi Arabia.....	78
4.44	Serbia & Montenegro.....	79
4.45	Slovakia.....	79
4.46	Slovenia.....	80
4.47	South Africa	80
4.48	South Korea.....	81
4.49	Spain	82
4.50	Sweden.....	84
4.51	Switzerland.....	85
4.52	Taiwan.....	89
4.53	Thailand	90
4.54	Tunisia.....	91
4.55	Turkey	92
4.56	UAE	93
4.57	Ukraine.....	94
4.58	United Kingdom.....	94
4.59	USA.....	101
5.	REGIONAL MARKETS.....	109
5.1	WESTERN EUROPE	109
	Western Europe The Market for HV Switchgear, by Country, 2005 – 2010 (US\$ Million).....	109
	Western Europe: The Market for HV Switchgear, by Country, 2005 – 2010 (% Change)	110
	Western Europe: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	111
	Western Europe: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	112
	Western Europe: The Market for HV Distribution Switchgear, by Country, by Location 2010 (US\$ Million)	113
	Western Europe: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	114
	Western Europe: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	115
	Western Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	116
	Western Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	117
5.2	EASTERN EUROPE	119
	Eastern Europe The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	119
	Eastern Europe: The Market for HV Switchgear, by Country ,2005 – 2010 (% Change)	120
	Eastern Europe: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	121
	Eastern Europe: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	122
	Eastern Europe: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	123
	Eastern Europe: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	124
	Eastern Europe: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	125
	Eastern Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	126
	Eastern Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	127
5.3	FORMER SOVIET UNION	129
	Former Soviet Union The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million)	129
	Former Soviet Union: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change).....	130
	Former Soviet Union: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	131
	Former Soviet Union: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	132
	Former Soviet Union: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	133
	Former Soviet Union: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	134
	Former Soviet Union: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	135
	Former Soviet Union: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	136
	Former Soviet Union: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	137
5.4	NORTH AFRICA	139

	North Africa The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	139
	North Africa: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	139
	North Africa: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	140
	North Africa: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	140
	North Africa: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	141
	North Africa: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	141
	North Africa: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	142
	North Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	142
	North Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	142
5.5	WEST AFRICA	143
	West Africa The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	143
	West Africa: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	144
	West Africa: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	145
	West Africa: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	146
	West Africa: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	147
	West Africa: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	148
	West Africa: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	149
	West Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	150
	West Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	151
5.6	CENTRAL AFRICA.....	152
	Central Africa The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million)	152
	Central Africa: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	152
	Central Africa: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	153
	Central Africa: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million).....	153
	Central Africa: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	154
	Central Africa: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	154
	Central Africa: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	155
	Central Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	155
	Central Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	156
5.7	EAST AFRICA	157
	East Africa The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	157
	East Africa: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	158
	East Africa: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	159
	East Africa: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million).....	160
	East Africa: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	161
	East Africa: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	162
	East Africa: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	163
	East Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	164
	East Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	165
5.8	SOUTHERN AFRICA.....	166
	Southern Africa The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	166
	Southern Africa: The Market for HV Switchgear, by Country, 2005- 2010 (% Change).....	166
	Southern Africa: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	167
	Southern Africa: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	167
	Southern Africa: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	168
	Southern Africa: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	168
	Southern Africa: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	169
	Southern Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	169
	Southern Africa: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	170
5.9	MIDDLE EAST	171
	Middle East The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	171
	Middle East: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	172
	Middle East: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	173
	Middle East: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	174
	Middle East: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	175
	Middle East: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	176
	Middle East: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	177
	Middle East: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	178
	Middle East: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	179
5.10	SOUTH ASIA	181
	South Asia The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million)	181
	South Asia: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change).....	181
	South Asia: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)	182
	South Asia: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	182
	South Asia: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	183
	South Asia: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	183

	South Asia: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	184
	South Asia: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	184
	South Asia: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	185
5.11	FAR EAST	187
	Far East The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	187
	Far East: The Market for HV Switchgear, by Country, 2005- 2010 (% Change)	188
	Far East: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	189
	Far East: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	190
	Far East: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	191
	Far East: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)	192
	Far East: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	193
	Far East: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	194
	Far East: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	195
5.12	SOUTH AMERICA	197
	South America The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million)	197
	South America: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	198
	South America: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	199
	South America: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million).....	200
	South America: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	201
	South America: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	202
	South America: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	203
	South America: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	204
	South America: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	205
5.13	CENTRAL AMERICA AND CARIBBEAN	207
	Central America and Caribbean The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	207
	Central America and Caribbean: The Market for HV Switchgear, by Country, 2005 – 2010 (% Change).....	208
	Central America and Caribbean: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	209
	Central America and Caribbean: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)	210
	Central America and Caribbean: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million).....	211
	Central America and Caribbean: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	212
	Central America and Caribbean: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million).....	213
	Central America and Caribbean: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million).....	214
	Central America and Caribbean: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)	215
5.14	NORTH AMERICA.....	217
	North America The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million)	217
	North America: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	217
	North America: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	218
	North America: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million).....	218
	North America: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	219
	North America: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	219
	North America: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	220
	North America: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	220
	North America: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	221
5.15	OCEANIA.....	223
	Oceania: The Market for HV Switchgear, by Country, 2005 - 2010 (US\$ Million).....	223
	Oceania: The Market for HV Switchgear, by Country, 2005 - 2010 (% Change)	223
	Oceania: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million).....	224
	Oceania: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million).....	224
	Oceania: The Market for HV Switchgear, by Country, by Location 2010 (US\$ Million)	225
	Oceania: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million).....	225
	Oceania: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)	226
	Oceania: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)	226
	Oceania: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change).....	227
	PRODUCTION	229
	The Top 25 Producers of HV Switchgear, 2010 (US\$ Million)	229
6.	TRADE ANALYSIS	231
6.1	TOP 25 EXPORTERS	231
	The Top 25 Exporters of HV Switchgear, 2007 to 2009 (US\$ Thousands).....	231
	The Top 25 Exporters of HV Fuses, 2009 (US\$ Thousands)	232
	The Top 25 Exporters of HV Circuit Breakers 1-72.5kV, 2009 (US\$ Thousands)	233
	The Top 25 Exporters of HV Circuit Breakers >72.5kV, 2009 (US\$ Thousands).....	234

	The Top 25 Exporters of HV Switches, 2009 (US\$ Thousands)	235
	The Top 25 Exporters of Lightning Arresters, 2009 (US\$ Thousands)	236
	The Top 25 Exporters of Other HV Apparatus, 2009 (US\$ Thousands)	237
	The Top 25 Exporters of HV Distribution Boards and Panels, 2009 (US\$ Thousands)	238
6.2	TOP 25 IMPORTERS	239
	The Top 25 Importers of HV Switchgear, 2007 to 2009 (US\$ Thousands)	239
	The Top 25 Importers of HV Fuses, 2009 (US\$ Thousands)	240
	The Top 25 Importers of HV Circuit breakers 1 to 72.5kV, 2009 (US\$ Thousands)	241
	The Top 25 Importers of HV Circuit Breakers >72.5kV, 2009 (US\$ Thousands)	242
	The Top 25 Importers of HV Switches, 2009 (US\$ Thousands)	243
	The Top 25 Importers of HV Lightning Arresters, 2009 (US\$ Thousands)	244
	The Top 25 Importers of Other HV Apparatus, 2009 (US\$ Thousands)	245
	The Top 25 Importers of HV Distribution Boards and Panels, 2009 (US\$ Thousands)	246
6.3	EXPORT VALUES	247
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Austria - Canada, 2009 (US\$ Thousand)	247
	The Top 25 Exporters of HV Switchgear to Principal Destinations, China – France, 2009 (US\$ Thousand)	248
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Germany - India, 2009 (US\$ Thousand)	249
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Italy – Korea South, 2009 (US\$ Thousand)	250
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Malaysia - Netherlands, 2009 (US\$ Thousand)	251
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Norway – Singapore, 2009 (US\$ Thousand) ..	252
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Spain - Switzerland, 2009 (US\$ Thousand)	253
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Turkey - USA, 2009 (US\$ Thousand)	254
6.4	EXPORT PERCENTAGES	255
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Austria - Canada, 2009 (US\$ %)	255
	The Top 25 Exporters of HV Switchgear to Principal Destinations, China – France, 2009 (US\$ %)	256
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Germany - India, 2009 (US\$ %)	257
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Italy – Korea South, 2009 (US\$ %)	258
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Malaysia - Netherlands, 2009 (US\$ %)	259
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Norway – Singapore, 2009 (US\$ %)	260
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Spain - Switzerland, 2009 (US\$ %)	261
	The Top 25 Exporters of HV Switchgear to Principal Destinations, Turkey - USA, 2009 (US\$ %)	262
6.5	IMPORT VALUES	263
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	263
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	264
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	265
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	266
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	267
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	268
	Importers of HV Switchgear by Type, 2007 to 2009 Averaged (US\$ Thousands)	269
6.6	IMPORT VALUES	270
6.6.1	<i>HV Switchgear Imports by Country Alphabetical 2009</i>	270
	Imports of HV Switchgear, by Country, Albania - Argentina 2009 (US\$ Thousand)	270
	Imports of HV Switchgear, by Country, Armenia - Australia 2009 (US\$ Thousand)	271
	Imports of HV Switchgear, by Country, Austria - Bahamas 2009 (US\$ Thousand)	272
	Imports of HV Switchgear, by Country, Bahrain - Belarus 2009 (US\$ Thousand)	273
	Imports of HV Switchgear, by Country, Belgium - Bolivia 2009 (US\$ Thousand)	274
	Imports of HV Switchgear, by Country, Bosnia - Brazil 2009 (US\$ Thousand)	275
	Imports of HV Switchgear, by Country, Bulgaria - Burundi 2009 (US\$ Thousand)	276
	Imports of HV Switchgear, by Cote d'Ivoire - Canada 2009 (US\$ Thousand)	277
	Imports of HV Switchgear, by Country, Cape Verde - Chile 2009 (US\$ Thousand)	278
	Imports of HV Switchgear, by Country, China - Macao 2009 (US\$ Thousand)	279
	Imports of HV Switchgear, by Country, Colombia – Croatia 2009 (US\$ Thousand)	280
	Imports of HV Switchgear, by Country, Cyprus - Denmark 2009 (US\$ Thousand)	281
	Imports of HV Switchgear, by Country, Djibouti – Ecuador 2009 (US\$ Thousand)	282
	Imports of HV Switchgear, by Country, Egypt - Estonia 2009 (US\$ Thousand)	283
	Imports of HV Switchgear, by Country, Ethiopia – Fiji 2009 (US\$ Thousand)	284
	Imports of HV Switchgear, by Country, Finland – French Polynesia 2009 (US\$ Thousand)	285
	Imports of HV Switchgear, by Country, Gambia – Greece 2009 (US\$ Thousand)	286
	Imports of HV Switchgear, by Country, Granada - Guyana 2009 (US\$ Thousand)	287
	Imports of HV Switchgear, by Country, Honduras – Iceland 2009 (US\$ Thousand)	288
	Imports of HV Switchgear, by Country, India - Ireland 2009 (US\$ Thousand)	289
	Imports of HV Switchgear, by Country, Israel - Jamaica 2009 (US\$ Thousand)	290
	Imports of HV Switchgear, by Country, Japan - Kazakhstan 2009 (US\$ Thousand)	291
	Imports of HV Switchgear, by Country, Kenya – Latvia 2009 (US\$ Thousand)	292
	Imports of HV Switchgear, by Country, Lebanon – Luxembourg 2009 (US\$ Thousand)	293

Imports of HV Switchgear, by Country, Madagascar – Malaysia 2009 (US\$ Thousand)	294
Imports of HV Switchgear, by Country, Malta - Mayotte 2009 (US\$ Thousand)	295
Imports of HV Switchgear, by Country, Mexico - Montserrat 2009 (US\$ Thousand)	296
Imports of HV Switchgear, by Country, Morocco - Nepal 2009 (US\$ Thousand)	297
Imports of HV Switchgear, by Country, Netherlands – New Zealand 2009 (US\$ Thousand)	298
Imports of HV Switchgear, by Country, Nicaragua - Norway 2009 (US\$ Thousand)	299
Imports of HV Switchgear, by Country, Oman - Panama 2009 (US\$ Thousand)	300
Imports of HV Switchgear, by Country, Paraguay - Philippines 2009 (US\$ Thousand)	301
Imports of HV Switchgear, by Country, Poland – Rep. Korea 2009 (US\$ Thousand)	302
Imports of HV Switchgear, by Country, Rep Moldova - Russia 2009 (US\$ Thousand)	303
Imports of HV Switchgear, by Country, Rwanda - Samoa 2009 (US\$ Thousand)	304
Imports of HV Switchgear, by Country, Sao Tome & Principe - Senegal 2009 (US\$ Thousand)	305
Imports of HV Switchgear, by Country, Serbia - Slovakia 2009 (US\$ Thousand)	306
Imports of HV Switchgear, by Country, Slovenia - Spain 2009 (US\$ Thousand)	307
Imports of HV Switchgear, by Country, Sri Lanka – Sweden 2009 (US\$ Thousand)	308
Imports of HV Switchgear, by Country, Switzerland - Thailand 2009 (US\$ Thousand)	309
Imports of HV Switchgear, by Country, Trinidad & Tobago - Turkey 2009 (US\$ Thousand)	310
Imports of HV Switchgear, by Country, Uganda - UK 2009 (US\$ Thousand)	311
Imports of HV Switchgear, by Country, Tanzania - USA 2009 (US\$ Thousand)	312
Imports of HV Switchgear, by Country, Venezuela - Yemen 2009 (US\$ Thousand)	313
Imports of HV Switchgear, by Country, Zambia – Zimbabwe 2009 (US\$ Thousand)	314
6.6.2 HV Switchgear Imports by Region, by Country 2005 to 2009	315
Imports of HV Switchgear, Western Europe, by Country, 2005 to 2009 Values (US\$ Thousand)	315
Imports of HV Switchgear, Eastern Europe, by Country, 2005 to 2009 Values (US\$ Thousand)	316
Imports of HV Switchgear, Former Soviet Union, by Country, 2005 to 2009 Values (US\$ Thousand)	317
Imports of HV Switchgear, North Africa, by Country, 2005 to 2009 Values (US\$ Thousand)	318
Imports of HV Switchgear, Western Africa, by Country, 2005 to 2009 Values (US\$ Thousand)	319
Imports of HV Switchgear, Central Africa, by Country, 2005 to 2009 Values (US\$ Thousand)	320
Imports of HV Switchgear, East Africa, by Country, 2005 to 2009 Values (US\$ Thousand)	320
Imports of HV Switchgear, Southern Africa, by Country, 2005 to 2009 Values (US\$ Thousand)	321
Imports of HV Switchgear, Middle East, by Country, 2005 to 2009 Values (US\$ Thousand)	322
Imports of HV Switchgear, Indian Sub-Continent, by Country, 2005 to 2009 Values (US\$ Thousand)	323
Imports of HV Switchgear, Asia, by Country, 2005 to 2009 Values (US\$ Thousand)	324
Imports of HV Switchgear, South America, by Country, 2005 to 2009 Values (US\$ Thousand)	325
Imports of HV Switchgear, C America & Caribbean, by Country, 2005 to 2009 Values (US\$ Thousand)	326
Imports of HV Switchgear, North America, by Country, 2005 to 2009 Values (US\$ Thousand)	327
Imports of HV Switchgear, Australasia, by Country, 2005 to 2009 Values (US\$ Thousand)	328
7. APPENDICES	329
7.1 BACKGROUND COUNTRY INFORMATION.....	329
7.1.1 Europe.....	329
Europe: Basic Demographics and Power Loading, by Country	329
Europe: Basic Demographics and Power Loading , by Country - continued	330
7.1.2 Africa.....	331
Africa: Basic Demographics and Power Loading, by Country	331
Africa: Basic Demographics and Power Loading, by Country - continued	332
7.1.3 Asia	333
Asia: Basic Demographics and Power Loading, by Country	333
Asia: Basic Demographics and Power Loading, by Country - continued	334
7.1.4 South America	335
South America: Basic Demographics and Power Loading, by Country	335
7.1.5 North and Central America and Caribbean.....	336
North & Central America & Caribbean: Basic Demographics and Power Loading, by Country	336
North & Central America & Caribbean: Basic Demographics and Power Loading, by Country - continued.....	337
7.1.6 Oceania	338
Oceania: Basic Demographics and Power Loading, by Country	338
7.2 EXCHANGE RATES	339
Exchange Rates for Major Currencies against US Dollar 2004-2009.....	339
7.3 ESTIMATED PRODUCTION BY COMPANY BY COUNTRY	340
Estimated production by Country by Company-2010 (US\$ Million)	340

1. INTRODUCTION

1.1 OBJECTIVES AND SCOPE

The objective of this report is to provide a concise overview of the world market for High Voltage Switchgear. The report gives an estimate of the value of High Voltage Switchgear consumption in each national market, broken down by product type. The data given are 2005-2009 actual market values and estimated 2010 and 2011 market values; forward projections through to 2020 are made on the basis of the infrastructure development in each country over the last 30 years.

For the purposes of this report the High Voltage Switchgear market is defined as comprising fuses/cut-outs; automatic circuit breakers (oil/air/SF6 - including reclosers); vacuum interrupters; isolating (make and break) switches; lightning arresters/limiters/suppressors; discrete panels/bays.

In other words, the report examines transmission and distribution substation components, not including HV Switchgear, capacitors, bus systems or relays. Values will not include application engineering, project management, installation or maintenance costs.

Within this report High Voltage Switchgear has been broken down into seven categories :

- **Fuses** (for a voltage exceeding 1000 volts)
- **Circuit Breakers** (Automatic, for a voltage exceeding 1000 volts but less than 72.5 kV)
- **Circuit Breakers** (Automatic, for a voltage exceeding 72.5 kV)
- **Switches** (Isolating and Make-and-Break, for a voltage exceeding 1000 volts)
- **Distribution and Control Panels** (for a voltage exceeding 1000 volts)
- **Lightning Arresters** (including voltage limiters and surge suppressors, for a voltage exceeding 1000 volts)
- **Other** (Other electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits, including boards, panels [including numerical control panels] consoles, desks, cabinets etc. for electric control or the distribution of electricity) for a voltage exceeding 1000 volts.

The market sizes for High Voltage Switchgear are also broken down by voltage, into the following voltage ranges:

- **1 – 49 kV**
- **50 – 150 kV**
- **>150 kV**

The market sizes for High Voltage Switchgear are also broken down by type of use, into the following voltage categories:

- **Switchyards and Major Substations**

- **Overhead Line Gear**
- **Primary Distribution Equipment**
- **Secondary Distribution Equipment**

Distribution switchgear is further segmented into:

- **Distribution Switchgear (Outdoor use)**
- **Distribution Switchgear (Indoor use)**

The market sizes for High Voltage Switchgear are also broken down by type of customer, into the following voltage categories:

- **Utility Companies**
- **Construction and Industry**
- **Rail and Transport**
- **Mining, Marine and Offshore**

The scope for this report is global - that is, every country having a significant customer base for High Voltage Switchgear. The report is designed to be used as a first line planning tool by companies interested in the global market for High Voltage Switchgear, and as a base from which to identify national markets worthy of further investigation.

1.2 METHODOLOGY

Data in the markets report is presented in US dollars (conversion tables are included in the appendices). The salient points of the methodology are as follows:-

- The survey was based primarily on desk research, including a review of available published production and trade statistics. Import and export figures are calculated from national and United Nations' figures for 2005 – 2009 the most comprehensive and up-to-date statistics available. Market values are assumed to be equal to Production + (Imports - Exports). National production estimates are based on statistics provided by national governments and trade associations. Market sizes for 2010 are estimated by analysing a range of economic indicators together with trends in trade flow and the pattern of market size growth over the period 2005-2009.
- Market values for the period 2011 to 2020 have been estimated based on two separate methodologies. Firstly the past growth rate in market values for each country have been extrapolated and have been compared with general macro-economic indicators such as GDP, GDP growth and inputs to the value added for each economy. Secondly, the development of the electrical power system in each country has been studied to provide indications for future system growth, and hence market growth.
- Market values are at factory gate prices - they reflect the prices for the products by the importer and do not include trade mark-ups and installation costs. It should be noted that published classifications of products, especially with respect to trade statistics, are sometimes inaccurate, as products may be shipped under generic titles. It should also be noted that Goulden Reports chronicles shipments rather than contracts. A contract to supply goods over a number of years will not appear as a one-off event in a Goulden Report, but rather will be recorded from the trade statistics. The nature of the market means that demand within countries, especially developing ones, can fluctuate greatly from year to year as purchases are often made on a one-off basis rather than spread evenly over a number of years.
- Within national markets, where published figures were unavailable to us, the breakdown between different product categories is based on intelligence about the pattern of consumption in the country concerned. In these cases the breakdown is made from an estimate of the total market size rather than the value of the entire market being calculated from the individual product categories.

Clients that have purchased previous editions of this report will notice several changes in the content and presentation of this edition. Firstly the contact directory, which was previously published as a separate report has now been incorporated in Section 4 of this report. The addition of a greater depth of information on market segmentation lead us to believe that one complete report covering markets and manufacturers would be more useful to purchasers.

Secondly as alluded to above this edition contains a more detailed analysis of the market in each country. We have also changed the source of trade data that has been in this report. Previous editions have used the Standard International Classification system, revision 3 - SITC Rev 3; in this edition the Harmonised System HS2002 has been used. This has allowed a greater depth of analysis of international trade by type of equipment. Figures for non-UN countries are based on data obtained from individual countries and are consequently not necessarily comparable with

UN-derived information. Clearly the report is only as accurate as the information upon which it draws - the sources are regarded as being the best and most comprehensive available.

2. SUMMARY

The global market for HV Switchgear was valued at US\$xxxxx million in 2010 having grown at a cagr of 6.7% pa between 2005 and 2010.

We forecast that the global market will increase at a cagr of xxx pa to reach US\$xxxxx million in 2020 – based on 2010 prices.

The largest national market in 2010 was that of China, which was valued at US\$xxxxx million and which accounted for 20% of the overall world market.

The second largest national market was that of the USA (US\$xxxxx million) followed by Japan (US\$xxxxx million).

The largest regional market for HV Switchgear in 2010 was the Far East (US\$xxxxx million) followed by Western Europe (US\$xxxxx million) and North America (US\$xxxxx million).

The largest producer in 2010 was China, with production totalling US\$xxxxx million.

Reported exports of HV Switchgear totalled US\$13,770 million in 2009.

The largest exporter in 2009 was Germany (US\$3,366 million), followed by France (US\$1,030 million) and the USA (US\$940 million).

The largest importer in 2009 was China (US\$903 million) followed by Germany (US\$705 million) and The USA (US\$678 million). 3 year average imports 2007 to 2009 show China to be the biggest (US\$1,012 million), followed by the USA (US\$730 million), Germany (US\$580 million) and Russia (US\$521 million).

ABB is the largest producer of HV Switchgear with products across the full spectrum of the high voltage range and the company's world market share is estimated to be a little under xxx%. Siemens is second at a little over xxx% and third place has been made complicated by the division and amalgamation of the old Areva T&D business into Alstom and Schneider (HV and MV parts respectively). We estimate the Alstom share of the global market to be xxx% and the Schneider share to be xxx%. It should also be noted that we have shown the respective shares of Hitachi, Fuji and Meidensha separately, their combined share as JAEPS equates to xxx%. It is also interesting to note that whilst China is the largest producer of switchgear because of the large number of indigenous manufacturers the largest Chinese player has less than xxx% share of the global market. The HV switchgear market is however populated with specialists in very high voltage and also with some companies majoring in the 1 to 50kV voltage range therefore the market shares by product sub-sector will vary greatly from the headline figures.

It was noted in the summary of the last edition of this report that

“The rising costs of commodity prices have been passed on by manufacturers and as a result the market value growth has increased eased from 5.79% cagr during the period 2002 to 2005; to 9.7% cagr between 2004 and 2007. It is difficult to isolate the actual volume growth within these value rates but although parts of the world – most notably China and India have seen their economies growing at double digit rates – global market growth for HV switchgear approaching 10% is unprecedented in modern history. Global year on year growth rates over the last 20 years have typically been less than half of these levels.”

In retrospect 2007 was the year of fastest growth which peaked at 14.6% in 2007

In 2008 the global market grew at xxx% although this must be set against a background of the global financial crash. The growth recorded in 2008 probably reflects on-going projects which had been planned or were being implemented and which could not be easily cancelled. Interestingly our calculations indicate that at no time has the global market stopped growing, although 2009 was a close call with global growth at a magnificent xxx% overall.

Within this global figure there are great variations. 4 regions showed negative growth in 2009; the biggest decline recorded is in North America with a xxx% growth. Europe has stagnated with the period 2008 to 2010 showing xxx%, xxx% and xxx% respectively. The view of world markets from within these regions must look very bleak.

To put this into perspective; the USA market peaked at just over \$xxx billion in 2008 but (using 2010 constant dollars) the market will not reach that value again until 20xx. Even Germany, the power house of Europe which peaked at \$xxx million in 2007 will not reach that level again until 20xx.

Again in the 2008 edition we noted:-

On balance, because of long term nature of infrastructure planning it is unlikely that HV switchgear markets will collapse as committed projects roll on, especially at transmission voltage levels; however it is likely that some “discretionary” spend at lower voltage levels will be delayed and this will depress the markets in the medium term. Overall we expect to see a return to global cagr levels of around 4.0% between 2008 and 2015.

Overall this has been the case and clearly the lower 1-50kV markets have been especially difficult and we have cut back our expectations of growth to less than xxx% up to 2020. To this however must be attached the rider – assuming that the financial problems in parts of the world are resolved or at least get no worse.

2.1 SUMMARY TABLES

Table 1

**The Fastest Growing National Markets for HV Switchgear
2005 - 2010 (US\$ Million)**

Country	Market Size 2005	Market Size 2010	% Change 2005 - 2010
Qatar			
Angola			
Azerbaijan			
Jordan			
Ethiopia			
Iraq			
Kazakhstan			
Indonesia			
United Arab Emirates			
Norway			
Malaysia			
Egypt			
Oman			
Venezuela			
India			

Source: Goulden Reports and United Nations

Note: Only countries with market sizes greater than US\$50 million are included in this section. Smaller markets may display significantly larger percentage changes.

Table 2
**The Fastest Growing National Markets for HV Switchgear
 2008 - 2010 (US\$ Million)**

Country	Market Size 2008	Market Size 2010	% Change 2008 - 2010
Syria			
Ethiopia			
Azerbaijan			
Iraq			
Kazakhstan			
Jordan			
Qatar			
Singapore			
Algeria			
Angola			

Source: Goulden Reports and United Nations

Note: Only countries with market sizes greater than US\$50 million are included in this section.
 Smaller markets may display significantly larger percentage changes.

Table 3

**The Fastest Declining National Markets for HV Switchgear
2005 - 2010 (US\$ Million)**

Country	Market Size 2005	Market Size 2010	% Change 2005 – 2010
Saudi Arabia			
Italy			
China, Hong Kong			
Singapore			
Vietnam			
Spain			
Mexico			
Korea, South			
USA			
Germany			
Korea, North			
Taiwan			
Libya			
Sweden			
Philippines			
Romania			
Morocco			
China			
Israel			
Netherlands			

Source: Goulden Reports and United Nations

Note: Only countries with market sizes greater than US\$25 million are included in this section. Smaller markets may display significantly larger percentage changes.

Table 4

**The Fastest Declining National Markets for HV Switchgear
2008 - 2010 (US\$ Million)**

Country	Market Size 2008	Market Size 2010	% Change 2008 - 2010
China, Hong Kong			
Kuwait			
Italy			
Oman			
Venezuela			
Ukraine			
Vietnam			
Spain			
South Africa			
Mexico			
Korea, South			
Pakistan			
Austria			
USA			
Norway			

Source: Goulden Reports and United Nations

Note: Only countries with market sizes greater than US\$50 million are included in this section. Smaller markets may display significantly larger percentage changes.

Table 5

The Largest National Markets for HV Switchgear 2020 (US\$ Million)

Country	Market Size 2020	% Global Market
China		
USA		
Russia		
Japan		
United Arab Emirates		
India		
Germany		
Brazil		
France		
UK		
Qatar		
Taiwan		
Thailand		
Canada		
Spain		
Malaysia		
Algeria		
Kazakhstan		
Australia		
Korea, South		

Source: Goulden Reports and United Nations

3. THE WORLD MARKET

Table 6

The World Market for HV Switchgear, by Region, 2005- 2010 (US\$ Million)

Region	2005	2006	2007	2008	2009	2010
Western Europe	3,099.4	3,228.9				
Eastern Europe	502.5	520.7				
Former USSR	1,159.5	1,354.0				
North Africa	515.0	652.8				
West Africa	77.1	119.2				
Central Africa	12.3	6.5				
East Africa	45.2	84.3				
Southern Africa	146.5	190.4				
Middle East	1,012.9	1,218.4				
South Asia	323.7	375.8				
Far East	7,064.4	7,792.9				
South America	881.6	942.4				
Central America & Caribbean	96.1	98.6				
North America	2,632.6	2,827.9				
Oceania	167.6	191.7				
Total	17,736.6	19,604.6				

Source: Goulden Reports and United Nations

Table 7

The World Market for HV Switchgear, by Region, 2005 - 2010 (% Change)

Region	2006/2005	2007/2006	2008/2007	2009/2008	2010/2009
Western Europe					
Eastern Europe					
Former USSR					
North Africa					
West Africa					
Central Africa					
East Africa					
Southern Africa					
Middle East					
South Asia					
Far East					
South America					
Central America & Caribbean					
North America					
Oceania					
Total					

Source: Goulden Reports and United Nations

Table 8

The World Market for HV Switchgear, by Region, by Equipment Type 2010 (US\$ Million)

Region	Fuses	ACB's 1 to 72.5kV	ACB's > 72.5kV	Switches	Lightning Arresters	Other Equip'nt	Panels	Total million (\$)
Western Europe								
Eastern Europe								
Former USSR								
North Africa								
West Africa								
Central Africa								
East Africa								
Southern Africa								
Middle East								
South Asia								
Far East								
South America								
Cent. America & Carib.								
North America								
Oceania								
Total								

Source: Goulden Reports and United Nations

Table 9

The World Market for HV Switchgear, by Region, by Voltage Level 2010 (US\$ Million)

Region	1 – 50kV	50 to 150kV	Over 150kV	Total
Western Europe				
Eastern Europe				
Former USSR				
North Africa				
West Africa				
Central Africa				
East Africa				
Southern Africa				
Middle East				
South Asia				
Far East				
South America				
Cent. America & Carib.				
North America				
Oceania				
Total				

Source: Goulden Reports and United Nations

Table 10

The World Market for HV Distribution Switchgear, by Region, by Location 2010 (US\$ Million)

Region	Distribution Switchgear Outdoor	Distribution Switchgear Indoor	Total
Western Europe			
Eastern Europe			
Former USSR			
North Africa			
West Africa			
Central Africa			
East Africa			
Southern Africa			
Middle East			
South Asia			
Far East			
South America			
Cent. America & Carib.			
North America			
Oceania			
Total			

Source: Gouliden Reports and United Nations

Table 11

The World Market for HV Switchgear, by Region, by Type of Use 2010 (US\$ Million)

Region	S/yards & Major Subst'ns.	Overhead Line Gear	Primary Dist'ution Equipment	Secondary Dist'ution Equipment	Total
Western Europe					
Eastern Europe					
Former USSR					
North Africa					
West Africa					
Central Africa					
East Africa					
Southern Africa					
Middle East					
South Asia					
Far East					
South America					
Cent. America & Carib					
North America					
Oceania					
Total					

Source: Goulden Reports and United Nations

Table 12

The World Market for HV Switchgear, by Region, by End Use Customer 2010 (US\$ Million)

Region	Utility Organisations	Construction & Industry	Rail & Transport	Mining, Marine & Offshore	Total
Western Europe					
Eastern Europe					
Former USSR					
North Africa					
West Africa					
Central Africa					
East Africa					
Southern Africa					
Middle East					
South Asia					
Far East					
South America					
Cent. America & Carib.					
North America					
Oceania					
Total					

Source: Goulden Reports and United Nations

3.1 FORECAST WORLD MARKET 2011 - 2020

Table 13

The Forecast World Market for HV Switchgear, by Region, 2011 to 2020 (US\$ Million)

Region	2011	2012	2013	2014	2015	2020	cagr
Western Europe							
Eastern Europe							
Former USSR							
North Africa							
West Africa							
Central Africa							
East Africa							
Southern Africa							
Middle East							
South Asia							
Far East							
South America							
Cent. America & Carib.							
North America							
Oceania							
Total							

Source: Goulden Reports

Table 14

The Forecast World Market for HV Switchgear, by Region, 2011 to 2020 (% Change)

Region	2012/11	2013/12	2014/13	2015/14	2020/15	2020/10
Western Europe						
Eastern Europe						
Former USSR						
North Africa						
West Africa						
Central Africa						
East Africa						
Southern Africa						
Middle East						
South Asia						
Far East						
South America						
Cent. America & Carib.						
North America						
Oceania						
Total						

Source: Goulden Reports

4. MAJOR HIGH VOLTAGE SWITCHGEAR MANUFACTURERS

The figures in this section are from published annual company reports and other official sources. The figures are, however, designed to serve as a general overview – inaccuracies may occur as a result of exchange rate fluctuations or insufficient primary data.

Table 15

Leading Manufacturers' Sales of HV Switchgear 2010 (US\$ Million)

Company	Country	Total Company Sales 2010	HV Switchgear Sales 2010	HV Switchgear % of Sales 2010	Estimated World Market Share %
ABB	Switzerland	31,589.0			
Alstom	France	28,155.0			
BHEL	India	7,707.0			
Cooper	USA	5,066.0			
CG	India	902.0			
Eaton	USA	13,715.0			
Fuji	Japan	9,490.0			
GE	USA	150,211.0			
Hitachi	Japan	96,436.0			
Hyundai Heavy Ind	Korea	19,673.0			
Meidensha	Japan	1,861.0			
Mitsubishi Electric	Japan	47,373.0			
Nissin	Japan	937.4			
Ormazabal	Spain	520.0			
S&C	USA	450.0			
Schneider	France	28,054.0			
Siemens	Germany	108,682.0			
Toshiba	Japan	83,181.0			
Sub-Total					
Others					
Total					

Source: Goulden Reports

JAEPS comprises; Hitachi, Fuji and Meidensha

Table 16

Leading Manufacturers' Sales of HV Switchgear, per Region, 2010 (US\$ Million)

Company	Western Europe	Eastern Europe & Former USSR	Africa	Middle East
ABB				
Alstom				
BHEL				
Cooper				
CG				
Eaton				
Fuji				
GE				
Hitachi				
Hyundai Heavy Ind				
Meidensha				
Mitsubishi Electric				
Nissin				
Ormazabal				
S&C				
Schneider				
Siemens				
Toshiba				
Sub-Total				
Others				
Total				

continued...

Table 17

Leading Manufacturers' Sales of HV Switchgear, per Region, 2010 (US\$ Million) - continued

Company	Asia-Pacific	North America	South & Central America & Caribbean	Total
ABB				
Alstom				
BHEL				
Cooper				
CG				
Eaton				
Fuji				
GE				
Hitachi				
Hyundai Heavy Ind				
Meidensha				
Mitsubishi Electric				
Nissin				
Ormazabal				
S&C				
Schneider				
Siemens				
Toshiba				
Sub-Total				
Others				
Total				

Source: Goulden Reports

4.1 HV SWITCHGEAR INDUSTRY CONTACT DETAILS

NB In this edition entries for Areva T&D SA have been left unchanged the identities of the Alstom and Schneider parts will be used in the next edition of this report.

4.2 Argentina

Areva T&D SA	Avda Leandro N. Alem 896, Piso 5 1001 Buenos Aires Argentina	Tel: +54 11 4891 9600 Fax: +54 11 4311 1040
Cutler-Hammer Argentina	Calle Reconquista 656 Piso Buenos Aires Argentina	Tel: +54 11 4315 4066 Fax: +54 11 4314 8946
Hitachi Argentina SA	Carlos Pellegrini 1363, Piso 1 1011 Buenos Aires Argentina	Tel: +54 11 4394 5452 Fax: +54 11 4394 5416
Mitsubishi Argentina SA	Florida 890-20 Piso 1005 Buenos Aires Argentina	Tel: +54 1 311 4549 Fax: +54 1 311 4801
Siemens SA	Casilla De Correo 12 32 1000 Buenos Aires Argentina	Tel: +54 11 43 40 84 00 Fax: +54 11 43 31 99 97
Telsin Srl	Moldes 1971, Floor 286 1428 Buenos Aires Argentina	Tel: +54 1 785 7754 Fax: +54 1 785 7754

4.3 Australia

ABB Pty Ltd	Po Box R 1406, Royal Exchange Level 20, Gold Fields House 1 Alfred Street Sydney, Nsw 2000 Australia	Tel: +61 2 9255 3999 Fax: +61 2 9255 3988
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USA

AB Chance	220 North Allen Street Centralia Mo 65240-1395 USA	Tel: +1 573 682 5521 Fax: +1 573 682 8714
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ABB Power T&D Co Inc	500 West Highway 94 Jefferson City Mo 65101-5032 USA	Tel: +1 573 659 6316 Fax: +1 573 634 7823
ABB Power T&D Co Ltd	Po Box 6005 North Brunswick Nj 08902 USA	Tel: +1 732 932 6319 Fax: +1 732 932 6373
ABB Power T&D Company	1128 Highway 412 Alamo Tn 38001 3813 USA	Tel: +1 901 696 5222 Fax: +1 901 686 5269
Areva T&D Inc	10801 Kemgwood Drive, Suite 1 Houston Texas 77043-1412 USA	Tel: +1 713 939 0091 Fax: +1 713 939 0134
Areva T&D USA Inc - P&C Division	300 Tice Boulevard Woodcliff Lake Nj 07677-0406 USA	Tel: +1 914 347 5166 Fax: +1 914 347 5508

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5. REGIONAL MARKETS

5.1 WESTERN EUROPE

Table 18

Western Europe The Market for HV Switchgear, by Country, 2005 – 2010 (US\$ Million)

Country	2005	2006	2007	2008	2009	2010
Austria						
Belgium						
Cyprus						
Denmark						
Finland						
France						
Germany						
Greece						
Iceland						
Ireland						
Italy						
Luxembourg						
Malta						
Netherlands						
Norway						
Portugal						
Spain						
Sweden						
Switzerland						
UK						
Total						

Source: Goulden Reports and United Nations

Table 19

Western Europe: The Market for HV Switchgear, by Country, 2005 – 2010 (% Change)

Country	2006/2005	2007/2006	2008/2007	2009/2008	2010/2009	Cagr
Austria						
Belgium						
Cyprus						
Denmark						
Finland						
France						
Germany						
Greece						
Iceland						
Ireland						
Italy						
Luxembourg						
Malta						
Netherlands						
Norway						
Portugal						
Spain						
Sweden						
Switzerland						
UK						
Total						

Source: Gouliden Reports and United Nations

Table 20

Western Europe: The Market for HV Switchgear, by Country, by Equipment Type 2010 (US\$ Million)

Country	Fuses	ACB's 1 to 72.5kV	ACB's > 72.5kV	Switches	Lightning Arresters	Other Equip'nt	Panels
Austria							
Belgium							
Cyprus							
Denmark							
Finland							
France							
Germany							
Greece							
Iceland							
Ireland							
Italy							
Luxembourg							
Malta							
Netherlands							
Norway							
Portugal							
Spain							
Sweden							
Switzerland							
UK							
Total							

Source: Goulden Reports and United Nations

Table 21

Western Europe: The Market for HV Switchgear, by Country, by Voltage 2010 (US\$ Million)

Country	1 – 50kV	50 to 150kV	Over 150kV	Total
Austria				
Belgium				
Cyprus				
Denmark				
Finland				
France				
Germany				
Greece				
Iceland				
Ireland				
Italy				
Luxembourg				
Malta				
Netherlands				
Norway				
Portugal				
Spain				
Sweden				
Switzerland				
United Kingdom				
Total				

Source: Goulden Reports and United Nations

Table 22

Western Europe: The Market for HV Distribution Switchgear, by Country, by Location 2010 (US\$ Million)

Country	Distribution Switchgear Outdoor	Distribution Switchgear Indoor	Total
Austria			
Belgium			
Cyprus			
Denmark			
Finland			
France			
Germany			
Greece			
Iceland			
Ireland			
Italy			
Luxembourg			
Malta			
Netherlands			
Norway			
Portugal			
Spain			
Sweden			
Switzerland			
United Kingdom			
Total			

Source: Goulden Reports and United Nations

Table 23

Western Europe: The Market for HV Switchgear, by Country, by Type of Use 2010 (US\$ Million)

Country	S/yards & Major Subst'ns.	Overhead Line Gear	Primary Dist'ution Equipment	SecondaryD ist'ution Equipment	Total
Austria					
Belgium					
Cyprus					
Denmark					
Finland					
France					
Germany					
Greece					
Iceland					
Ireland					
Italy					
Luxembourg					
Malta					
Netherlands					
Norway					
Portugal					
Spain					
Sweden					
Switzerland					
United Kingdom					
Total					

Source: Goulden Reports and United Nations

Table 24

Western Europe: The Market for HV Switchgear, by Country, by End Use Customer 2010 (US\$ Million)

Country	Utility Organisations	Construction & Industry	Rail & Transport	Mining, Marine & Offshore	Total
Austria					
Belgium					
Cyprus					
Denmark					
Finland					
France					
Germany					
Greece					
Iceland					
Ireland					
Italy					
Luxembourg					
Malta					
Netherlands					
Norway					
Portugal					
Spain					
Sweden					
Switzerland					
United Kingdom					
Total					

Source: Goulden Reports and United Nations

Table 25

Western Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (US\$ Million)

Country	2011	2012	2013	2014	2015	2020	cagr
Austria							
Belgium							
Cyprus							
Denmark							
Finland							
France							
Germany							
Greece							
Iceland							
Ireland							
Italy							
Luxembourg							
Malta							
Netherlands							
Norway							
Portugal							
Spain							
Sweden							
Switzerland							
United Kingdom							
Total							

Source: Goulden Reports and United Nations

Table 26

Western Europe: The Market for HV Switchgear, by Country, 2011 to 2020 (% Change)

Country	2011/12	2012/13	2013/14	2014/15	2020/15	2020/10
Austria						
Belgium						
Cyprus						
Denmark						
Finland						
France						
Germany						
Greece						
Iceland						
Ireland						
Italy						
Luxembourg						
Malta						
Netherlands						
Norway						
Portugal						
Spain						
Sweden						
Switzerland						
United Kingdom						
Total						

Source: Goulden Reports and United Nations

5.2 EASTERN EUROPE

5.3 FORMER SOVIET UNION

5.4 NORTH AFRICA

5.5 WEST AFRICA

5.6 CENTRAL AFRICA

5.7 EAST AFRICA

5.8 SOUTHERN AFRICA

5.9 MIDDLE EAST

5.10 SOUTH ASIA

5.11 FAR EAST

5.12 SOUTH AMERICA

5.13 CENTRAL AMERICA AND CARIBBEAN

5.14 NORTH AMERICA

5.15 OCEANIA

PRODUCTION

Table 27

The Top 25 Producers of HV Switchgear, 2010 (US\$ Million)

Country	Production	% share
China		
Germany		
USA		
Japan		
France		
Russia		
Switzerland		
Italy		
Brazil		
Korea, South		
India		
Spain		
Sweden		
Taiwan		
UK		
Canada		
Singapore		
Thailand		
Malaysia		
Mexico		
Netherlands		
Czech Republic		
Poland		
Hungary		
Portugal		
Others		
Total		

Source: Goulden Reports and United Nations

6. TRADE ANALYSIS

6.1 TOP 25 EXPORTERS

Table 28

The Top 25 Exporters of HV Switchgear, 2007 to 2009 (US\$ Thousands)

Country	2007 to 2009 Av.	Value 2009	% Total 2009
Germany			
France			
USA			
Switzerland			
China			
Italy			
Japan			
Singapore			
Korea, South			
Sweden			
Turkey			
Mexico			
Hungary			
Spain			
UK			
Czech Republic			
Netherlands			
Belgium			
Malaysia			
Portugal			
India			
Austria			
Canada			
Slovakia			
Norway			
Others			
Total			

Source: Goulden Reports and United Nations

Table 29

The Top 25 Exporters of HV Fuses, 2009 (US\$ Thousands)

Country	Value	% of World Total
Mexico		
USA		
China		
France		
Germany		
UK		
India		
Italy		
Spain		
Denmark		
Korea, South		
China, Hong Kong		
Brazil		
Belgium		
Colombia		
Singapore		
Thailand		
Japan		
Slovenia		
Hungary		
Poland		
Canada		
Sweden		
Switzerland		
Vietnam		
Others		
Total		

Source: Goulden Reports and United Nations

Table 30

The Top 25 Exporters of HV Circuit Breakers 1-72.5kV, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
France		
Italy		
Switzerland		
USA		
Australia		
Turkey		
Japan		
Korea, South		
China		
UK		
Russia		
Malaysia		
Ukraine		
Singapore		
India		
Indonesia		
Estonia		
Austria		
Portugal		
Netherlands		
Tunisia		
South Africa		
Canada		
Czech Republic		
Others		
Total		

Source: Goulden Reports and United Nations

Table 31

The Top 25 Exporters of HV Circuit Breakers >72.5kV, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
Sweden		
France		
Korea, South		
Japan		
USA		
China		
India		
Italy		
Brazil		
Belgium		
Netherlands		
UK		
Singapore		
Romania		
Russia		
Australia		
Spain		
Denmark		
Austria		
Poland		
Turkey		
Slovakia		
Canada		
Malaysia		
Others		
Total		

Source: Goulden Reports and United Nations

Table 32

The Top 25 Exporters of HV Switches, 2009 (US\$ Thousands)

Country	Value	% of World Total
Switzerland		
Japan		
Italy		
France		
USA		
Singapore		
Germany		
Korea, South		
Spain		
UK		
China		
Mexico		
Netherlands		
Canada		
Poland		
Austria		
Turkey		
Malta		
Czech Republic		
Russia		
China, Hong Kong		
Malaysia		
Belgium		
Brazil		
India		
Others		
Total		

Source: Goulden Reports and United Nations

Table 33

The Top 25 Exporters of Lightning Arresters, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
USA		
Sweden		
France		
China		
Japan		
Switzerland		
Spain		
India		
Australia		
Hungary		
China, Hong Kong		
Seychelles		
Greece		
UK		
Austria		
Slovakia		
Malaysia		
South Africa		
Brazil		
Canada		
Italy		
Russia		
Ireland		
Indonesia		
Others		
Total		

Source: Goulden Reports and United Nations

Table 34

The Top 25 Exporters of Other HV Apparatus, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
Singapore		
USA		
France		
Switzerland		
Japan		
Italy		
Hungary		
Slovakia		
China		
Mexico		
Netherlands		
Korea, South		
Belgium		
Sweden		
Morocco		
UK		
Austria		
Malaysia		
New Zealand		
Canada		
Saudi Arabia		
Spain		
Australia		
Thailand		
Others		
Total		

Source: Goulden Reports and United Nations

Table 35

The Top 25 Exporters of HV Distribution Boards and Panels, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
China		
Italy		
France		
USA		
Japan		
Korea, South		
Turkey		
Czech Republic		
Portugal		
Spain		
Hungary		
Norway		
Indonesia		
Singapore		
Malaysia		
Mexico		
Switzerland		
Thailand		
Poland		
Belgium		
Ukraine		
Canada		
India		
Sweden		
Others		
Total		

Source: Goulden Reports and United Nations

6.2 TOP 25 IMPORTERS

Table 36

The Top 25 Importers of HV Switchgear, 2007 to 2009 (US\$ Thousands)

Country	Av Value 2007 to 2009	Value 2009	% Total 2009
China			
Germany			
USA			
Russia			
UK			
Singapore			
France			
Malaysia			
Canada			
Spain			
Australia			
Kazakhstan			
Indonesia			
Thailand			
Algeria			
Korea, South			
India			
Mexico			
Belgium			
Turkey			
South Africa			
Italy			
Chile			
Switzerland			
Saudi Arabia			
Other			
Total			

Source: Goulden Reports and United Nations

Table 37

The Top 25 Importers of HV Fuses, 2009 (US\$ Thousands)

Country	Value	% of World Total
USA		
China, Hong Kong SAR		
France		
Canada		
India		
Malaysia		
United Kingdom		
Italy		
Mexico		
Rep. of Korea		
Denmark		
China		
Japan		
Belgium		
Singapore		
Nigeria		
Australia		
Germany		
Ireland		
Switzerland		
Venezuela		
Spain		
Oman		
Austria		
Philippines		
Others		
Total		

Source: Goulden Reports and United Nations

Table 38

The Top 25 Importers of HV Circuit breakers 1 to 72.5kV, 2009 (US\$ Thousands)

Country	Value	% of World Total
China		
USA		
France		
Turkey		
Czech Rep.		
Germany		
Brazil		
Malaysia		
Australia		
Mexico		
Russian Federation		
Canada		
Japan		
Egypt		
Indonesia		
South Africa		
Kazakhstan		
Sweden		
Rep. of Korea		
Singapore		
Poland		
United Kingdom		
Spain		
Thailand		
Hungary		
Others		
Total		

Source: Goulden Reports and United Nations

Table 39

The Top 25 Importers of HV Circuit Breakers >72.5kV, 2009 (US\$ Thousands)

Country	Value	% of World Total
China		
Russian Federation		
USA		
Australia		
Saudi Arabia		
United Kingdom		
India		
Canada		
South Africa		
Turkey		
Italy		
France		
Indonesia		
Japan		
Malaysia		
Philippines		
Poland		
Egypt		
Austria		
Algeria		
Germany		
Ukraine		
Armenia		
Singapore		
Croatia		
Others		
Total		

Source: Goulden Reports and United Nations

Table 40

The Top 25 Importers of HV Switches, 2009 (US\$ Thousands)

Country	Value	% of World Total
United Kingdom		
USA		
Saudi Arabia		
Germany		
Spain		
Belgium		
France		
Chile		
Australia		
Canada		
Viet Nam		
Thailand		
Mexico		
Argentina		
Venezuela		
South Africa		
China		
Bahrain		
Indonesia		
Brazil		
Romania		
Austria		
Singapore		
Russian Federation		
India		
Others		
Total		

Source: Goulden Reports and United Nations

Table 41

The Top 25 Importers of HV Lightning Arresters, 2009 (US\$ Thousands)

Country	Value	% of World Total
China		
Germany		
USA		
Rep. of Korea		
Canada		
France		
China, Hong Kong		
Mexico		
Italy		
Sweden		
Brazil		
South Africa		
Australia		
United Kingdom		
Austria		
Poland		
Chile		
India		
Czech Rep.		
Spain		
Turkey		
Indonesia		
Thailand		
Switzerland		
Viet Nam		
Others		
Total		

Source: Goulden Reports and United Nations

Table 42

The Top 25 Importers of Other HV Apparatus, 2009 (US\$ Thousands)

Country	Value	% of World Total
Germany		
USA		
Singapore		
Malaysia		
China		
United Kingdom		
France		
Belgium		
Italy		
India		
Spain		
Rep. of Korea		
Mexico		
Indonesia		
Austria		
Turkey		
Sweden		
Australia		
Poland		
Canada		
Russian Federation		
Norway		
Switzerland		
Brazil		
Algeria		
Others		
Total		

Source: Goulden Reports and United Nations

Table 43

The Top 25 Importers of HV Distribution Boards and Panels, 2009 (US\$ Thousands)

Country	Value	% of World Total
China		
Russian Federation		
Singapore		
Kazakhstan		
USA		
Thailand		
Algeria		
Indonesia		
Rep. of Korea		
Germany		
Spain		
Canada		
Azerbaijan		
Chile		
France		
South Africa		
Egypt		
Australia		
Switzerland		
Turkey		
Mexico		
United Kingdom		
Venezuela		
Malaysia		
India		
Others		
Total		

Source: Goulden Reports and United Nations

6.3 EXPORT VALUES

Table 44

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Austria - Canada, 2009 (US\$ Thousand)**

	Austria		Belgium		Canada
Russia		UAE		USA	
Germany		France		China	
Slovenia		Spain		Chile	
Italy		Germany		Germany	
UK		Saudi Arabia		Libya	
Iran		Switzerland		Mexico	
Serbia		Netherlands		Brazil	
UAE		Brazil		France	
Turkey		DR Congo		UK	
Chile		Italy		Saudi Arabia	
Switzerland		Algeria		UAE	
Saudi Arabia		Singapore		Cuba	
USA		Qatar		Singapore	
Algeria		Norway		Burkina Faso	
Romania		Iraq		Indonesia	
Ethiopia		USA		Morocco	
Czech Rep.		Angola		S. Korea	
Norway		Mexico		Peru	
Slovakia		Russia		Qatar	
China		Libya		Colombia	
Sweden		Kenya		Venezuela	
Macedonia		UK		Angola	
Kuwait		Madagascar		South Africa	
Viet Nam		Chile		Netherlands	
Costa Rica		Luxembourg		Spain	
Others		Others		Others	
Total		Total		Total	

Source: Goulden Reports and United Nations

Table 45

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
China – France, 2009 (US\$ Thousand)**

Table 46

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Germany - India, 2009 (US\$ Thousand)**

Table 47

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Italy – Korea South, 2009 (US\$ Thousand)**

Table 48

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Malaysia - Netherlands, 2009 (US\$ Thousand)**

Table 49

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Norway – Singapore, 2009 (US\$ Thousand)**

Table 50

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Spain - Switzerland, 2009 (US\$ Thousand)**

Table 51

**The Top 25 Exporters of HV Switchgear to Principal Destinations,
Turkey - USA, 2009 (US\$ Thousand)**

6.4 EXPORT PERCENTAGES

6.5 IMPORT VALUES

Table 52

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Country	1	2	3	4	5	6	7	8
Albania								
Algeria								
Argentina								
Armenia								
Australia								
Austria								
Azerbaijan								
Bahamas								
Bahrain								
Bangladesh								
Barbados								
Belarus								
Belgium								
Bosnia Herz								
Botswana								
Brazil								
Bulgaria								
Cambodia								
Canada								
Chile								

Source: Goulden Reports and United Nations

Key

1 = Fuses

2 = Circuit breakers 1 to 72.5kV

3 = Circuit breakers over 72.5kV

4 = Switches

5 = Lightning Arresters

6 = Other apparatus

7 = Distribution Boards & panels

8 = Total

Table 53

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Country	1	2	3	4	5	6	7	8
China								
Hong Kong								
China, Macao								
Colombia								
Costa Rica								
Cote d'Ivoire								
Croatia								
Cyprus								
Czech Rep.								
Denmark								
Djibouti								
Dominican Rep.								
Ecuador								
Egypt								
El Salvador								
Estonia								
Ethiopia								
Fiji								
Finland								
France								

Source: Goulden Reports and United Nations

Key

1 = Fuses

2 = Circuit breakers 1 to 72.5kV

3 = Circuit breakers over 72.5kV

4 = Switches

5 = Lightning Arresters

6 = Other apparatus

7 = Distribution Boards & panels

8 = Total

Table 54

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Table 55

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Table 56

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Table 57

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

Table 58

**Importers of HV Switchgear by Type,
2007 to 2009 Averaged (US\$ Thousands)**

6.6 IMPORT VALUES

6.6.1 HV Switchgear Imports by Country Alphabetical 2009

Table 59

Imports of HV Switchgear, by Country, Albania - Argentina 2009 (US\$ Thousand)

	Albania		Algeria		Argentina
Italy		France		Brazil	
Germany		Italy		Germany	
Spain		Germany		Italy	
Turkey		Turkey		France	
China		Japan		USA	
Sweden		Spain		Spain	
Croatia		UK		Turkey	
Greece		Belgium		Switzerland	
Slovenia		Lebanon		China	
Czech Rep.		Switzerland		Sweden	
Bulgaria		Other Europe		Australia	
Slovakia		Egypt		S Korea	
USA		Sweden		Areas, nes	
		Portugal		India	
		Canada		UK	
		USA		Argentina	
		China		Portugal	
		Morocco		Mexico	
		Poland		Canada	
		Austria		Japan	
Others		Others		Others	
Total		Total		Total	

Source: Goulden Reports and United Nations

Table 60

**Imports of HV Switchgear, by Country, Armenia - Australia
2009 (US\$ Thousand)**

Table 61

**Imports of HV Switchgear, by Country, Austria - Bahamas
2009 (US\$ Thousand)**

Table 62

**Imports of HV Switchgear, by Country, Bahrain - Belarus
2009 (US\$ Thousand)**

Table 63

**Imports of HV Switchgear, by Country, Belgium - Bolivia
2009 (US\$ Thousand)**

Table 64

**Imports of HV Switchgear, by Country, Bosnia - Brazil
2009 (US\$ Thousand)**

Table 65

**Imports of HV Switchgear, by Country, Bulgaria - Burundi
2009 (US\$ Thousand)**

Table 66

**Imports of HV Switchgear, by Cote d'Ivoire - Canada
2009 (US\$ Thousand)**

Table 67

**Imports of HV Switchgear, by Country, Cape Verde - Chile
2009 (US\$ Thousand)**

Table 68

**Imports of HV Switchgear, by Country, China - Macao
2009 (US\$ Thousand)**

Table 69

**Imports of HV Switchgear, by Country, Colombia – Croatia
2009 (US\$ Thousand)**

Table 70

**Imports of HV Switchgear, by Country, Cyprus - Denmark
2009 (US\$ Thousand)**

Table 71

**Imports of HV Switchgear, by Country, Djibouti – Ecuador
2009 (US\$ Thousand)**

Table 72

**Imports of HV Switchgear, by Country, Egypt - Estonia
2009 (US\$ Thousand)**

Table 73

**Imports of HV Switchgear, by Country, Ethiopia – Fiji
2009 (US\$ Thousand)**

Table 74

**Imports of HV Switchgear, by Country, Finland – French Polynesia
2009 (US\$ Thousand)**

Table 75

**Imports of HV Switchgear, by Country, Gambia – Greece
2009 (US\$ Thousand)**

Table 76

**Imports of HV Switchgear, by Country, Granada - Guyana
2009(US\$ Thousand)**

Table 77

**Imports of HV Switchgear, by Country, Honduras – Iceland
2009 (US\$ Thousand)**

Table 78

**Imports of HV Switchgear, by Country, India - Ireland
2009 (US\$ Thousand)**

Table 79

**Imports of HV Switchgear, by Country, Israel - Jamaica
2009 (US\$ Thousand)**

Table 80

**Imports of HV Switchgear, by Country, Japan - Kazakhstan
2009 (US\$ Thousand)**

Table 81

**Imports of HV Switchgear, by Country, Kenya – Latvia
2009 (US\$ Thousand)**

Table 82

**Imports of HV Switchgear, by Country, Lebanon – Luxembourg
2009 (US\$ Thousand)**

Table 83

**Imports of HV Switchgear, by Country, Madagascar – Malaysia
2009 (US\$ Thousand)**

Table 84

**Imports of HV Switchgear, by Country, Malta - Mayotte
2009 (US\$ Thousand)**

Table 85

**Imports of HV Switchgear, by Country, Mexico - Montserrat
2009 (US\$ Thousand)**

Table 86

**Imports of HV Switchgear, by Country, Morocco - Nepal
2009 (US\$ Thousand)**

Table 87

**Imports of HV Switchgear, by Country, Netherlands – New Zealand
2009 (US\$ Thousand)**

Table 88

**Imports of HV Switchgear, by Country, Nicaragua - Norway
2009 (US\$ Thousand)**

Table 89

**Imports of HV Switchgear, by Country, Oman - Panama
2009 (US\$ Thousand)**

Table 90

**Imports of HV Switchgear, by Country, Paraguay - Philippines
2009 (US\$ Thousand)**

Table 91

**Imports of HV Switchgear, by Country, Poland – Rep. Korea
2009 (US\$ Thousand)**

Table 92

**Imports of HV Switchgear, by Country, Rep Moldova - Russia
2009 (US\$ Thousand)**

Table 93

**Imports of HV Switchgear, by Country, Rwanda - Samoa
2009 (US\$ Thousand)**

Table 94

**Imports of HV Switchgear, by Country, Sao Tome & Principe - Senegal
2009 (US\$ Thousand)**

Table 95

**Imports of HV Switchgear, by Country, Serbia - Slovakia
2009 (US\$ Thousand)**

Table 96

**Imports of HV Switchgear, by Country, Slovenia - Spain
2009 (US\$ Thousand)**

Table 97

Imports of HV Switchgear, by Country, Sri Lanka – Sweden 2009 (US\$ Thousand)

Table 98

**Imports of HV Switchgear, by Country, Switzerland - Thailand
2009 (US\$ Thousand)**

Table 99

**Imports of HV Switchgear, by Country, Trinidad & Tobago - Turkey
2009 (US\$ Thousand)**

Table 100

**Imports of HV Switchgear, by Country, Uganda - UK
2009 (US\$ Thousand)**

Table 101

**Imports of HV Switchgear, by Country, Tanzania - USA
2009 (US\$ Thousand)**

Table 102

**Imports of HV Switchgear, by Country, Venezuela - Yemen
2009 (US\$ Thousand)**

Table 103

**Imports of HV Switchgear, by Country, Zambia – Zimbabwe
2009 (US\$ Thousand)**

6.6.2 HV Switchgear Imports by Region, by Country 2005 to 2009

Table 104

Imports of HV Switchgear, Western Europe, by Country, 2005 to 2009 Values (US\$ Thousand)

Country	2005	2006	2007	2008	2009
Austria					
Belgium					
Cyprus					
Denmark					
Finland					
France					
Germany					
Greece					
Iceland					
Ireland					
Italy					
Luxembourg					
Malta					
Netherlands					
Norway					
Portugal					
Spain					
Sweden					
Switzerland					
UK					
Total					

Source: Goulden Reports and United Nations

Table 105

**Imports of HV Switchgear, Eastern Europe, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 106

**Imports of HV Switchgear, Former Soviet Union, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 107

**Imports of HV Switchgear, North Africa, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 108

**Imports of HV Switchgear, Western Africa, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 109

**Imports of HV Switchgear, Central Africa, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 110

**Imports of HV Switchgear, East Africa, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 111

**Imports of HV Switchgear, Southern Africa, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 112

**Imports of HV Switchgear, Middle East, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 113

**Imports of HV Switchgear, Indian Sub-Continent, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 114

**Imports of HV Switchgear, Asia, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 115

**Imports of HV Switchgear, South America, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 116

**Imports of HV Switchgear, C America & Caribbean, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 117

**Imports of HV Switchgear, North America, by Country,
2005 to 2009 Values (US\$ Thousand)**

Table 118

**Imports of HV Switchgear, Australasia, by Country,
2005 to 2009 Values (US\$ Thousand)**

7. APPENDICES

7.1 BACKGROUND COUNTRY INFORMATION

7.1.1 Europe

Table 119

Europe: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Albania	28,748	3.2	6,124	1913.75	5,399	1,687
Austria	83,859	8.1	251,456	31,044	55,092	6,801
Belarus	207,600	9.9	17,493	1,767	29,170	2,946
Belgium	30,519	10.3	302,217	29,341	78,819	7,652
Bosnia Herzegovina	51,129	4.1	6963	1,698	8,318	2,029
Bulgaria	110,912	7.8	18,859	2,418	32,713	4,194
Croatia	56,538	4.5	28,322	6,294	15,198	3,377
Czech Republic	78,864	10.2	85,438	8,376	55,328	5,424
Denmark	43,094	5.4	212,404	39,334	31,633	5,858
Estonia	45,100	1.4	8,383	5,988	6,358	4,541
Faeroe Islands	1,399	0.05	-	-	205	4,100
Finland	338,145	5.2	161,549	31,067	78,578	15,111
France	551,500	59.7	1,747,973	29,279	414,699	6,946
Germany	356,733	82.6	2,400,655	29,064	512,905	6,210
Gibraltar	6	0.03	-	-	97	3,233
Greece	131,957	10.7	173,045	16,172	47,416	4,431
Hungary	93,032	10.1	82,805	8,199	35,990	3,563
Iceland	103,000	0.3	8,813	29,377	7,692	25,640
Ireland	70,284	3.9	148,553	38,091	21,777	5,584
Italy	301,268	57.6	1,465,895	25,450	293,896	5,102
Latvia	64,600	2.3	9,671	4,205	5,829	2,534
Lithuania	65,200	3.5	18,213	5,204	10,172	2,906

continued...

Europe: Basic Demographics and Power Loading , by Country - continued

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Luxembourg	2,586	0.5	19,883	39,766	5,735	11,470
Malta	316	0.4	3,678	9,195	2,000	5,000
Netherlands	40,844	16.2	511,556	31,578	100,666	6,214
Norway	323,877	4.6	221,579	48,169	107,426	23,353
Poland	323,250	38.2	209,563	5,486	117,418	3,074
Portugal	91,982	10.2	149,454	14,652	42,153	4,133
Rep.of Moldova	33,700	4.2	1,964	468	4,605	1,096
Romania	238,391	22.2	60,358	2,719	46,967	2,116
Russian Federation	17,075,400	143.4	433,491	3,023	779,985	5,439
Slovakia	49,012	5.4	31,868	5,901	23,972	4,439
Slovenia	20,256	2	26,284	13,142	10,631	5,316
Spain	505,992	41.1	836,100	20,343	218,374	5,313
Sweden	449,964	9	300,795	33,422	138,074	15,342
Switzerland	41,284	7.3	309,465	42,392	54,526	7,469
TFYR Macedonia	25,713	2	4,705	2,353	5,978	2,989
Ukraine	603,700	48.8	49,537	1,015	154,350	3,163
United Kingdom	244,100	59.3	1,794,858	30,267	343,943	5,800
Yugoslavia, Former	102,173	10.5	19,257	1,834	32,329	3,079

Source: Goulden Reports

7.1.2 Africa

Table 120

Africa: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Algeria	2,381,741	31.8	65,993	2,075	23,606	742
Angola	1,246,700	13.5	13,189	977	1,587	118
Benin	112,622	6.7	3,499	522	565	84
Botswana	581,730	1.7	7,388	4,346	1890	1,112
Burkina Faso	274,000	12.1	4,182	346	336	28
Burundi	27,834	7.2	869	121	138	19
Cameroon	475,442	16.1	12,449	773	3,321	206
Cape Verde	4,033	0.5	701	1,402	40	80
Central African Republic	622,984	3.9	1,198	307	99	25
Chad	1,284,000	8.6	2,648	308	89	10
Comoros	2,235	0.6	269	448	22	37
Congo	342,000	3.8	3,510	924	574	151
Côte d'Ivoire	322,463	16.8	13,734	818	2,976	177
Democratic Republic of Congo (formerly Zaire)	2,344,858	53.2	5,600	105	4,168	78
Djibouti	23,200	0.7	643	919	167	239
Egypt	1,001,449	67.6	82,427	1,219	75,578	1,118
Equatorial Guinea	28,051	0.5	437	874	25	50
Eritrea	117,600	4.4	734	167	229	52
Ethiopia	1,104,300	68.6	6,638	97	1,998	29
Gabon	267,668	1.3	4,813	3,702	1080	831
Gambia	11,295	1.4	442	316	84	60
Ghana	238,533	20.4	7,659	375	6,137	301
Guinea	245,857	7.9	3,626	459	795	101
Guinea-Bissau	36,125	1.5	202	135	51	34
Kenya	580,367	31.9	13,842	434	4,338	136
Lesotho	30,355	1.8	1135	631	308	171

continued...

Africa: Basic Demographics and Power Loading, by Country - continued

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Liberia	111,369	3.4	2,385	701	455	134
Libyan Arab Jamah	1,759,540	5.6	29,727	5,308	19,427	3,469
Madagascar	587,041	16.9	5,459	323	781	46
Malawi	118,484	11	1,731	157	1012	92
Mali	1,240,192	11.7	4,326	370	651	56
Mauritania	1,025,520	2.7	1128	418	177	66
Mauritius	2,040	1.2	5,012	4,177	1,707	1,423
Morocco	446,550	30.1	44,491	1,478	14,236	473
Mozambique	801,590	18.8	4,320	230	5046	268
Namibia	824,292	2	4,658	2,329	1920	960
Niger	1,267,000	11.8	2,730	231	328	28
Nigeria	923,768	135.5	50,202	370	18,430	136
Reunion	2,510	0.7	7,764	11,091	1,084	1,549
Rwanda	26,338	8.2	1,637	200	195	24
St. Helena	210	0.1	-	-	5	50
Sao Tome & Principe	964	0.2	50	250	16	80
Senegal	196,722	10	6,496	650	1615	162
Seychelles	455	0.8	626	783	203	254
Sierra Leone	71,740	5.3	793	150	237	45
Somalia	637,657	9.6	1,132	118	223	23
South Africa	1,221,037	45.3	159,886	3,529	189,363	4,180
Sudan	2,505,813	33.5	15,372	459	2,400	72
Swaziland	17,364	1.1	1,492	1,356	1173	1,066
Togo	56,785	4.9	1,759	359	451	92
Tunisia	163,610	9.9	24,282	2,453	10,046	1,015
Uganda	241,038	25.3	6,198	245	1401	55
United Rep. Tanzania	883,749	35.9	9,872	275	2566	71
Western Sahara	266,000	0.3	-	-	84	280
Zambia	752,618	10.4	4,299	413	5,345	514
Zimbabwe	390,757	13.1	8,304	634	11,220	856

Source: Goulden Reports

7.1.3 Asia

Table 121

Asia: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Afghanistan	652,090	28.7	55,995	1,951	652	23
Armenia	29,800	3.1	2,729	880	5,797	1,870
Azerbaijan	86,600	8.2	7,124	869	17,375	2,119
Bahrain	694	0.7	7,529	10,756	6,379	9,113
Bangladesh	143,998	138.1	51,897	376	15,299	111
Bhutan	47,000	0.9	578	642	313	348
Brunei Darussalam	5,765	0.4	7,756	19,390	2,286	5,715
Cambodia	181,035	13.4	4,289	320	101	8
China	9,596,961	1,288.40	1,409,852	1,094	1,456,596	1,131
Cyprus	9,251	0.8	9,373	11,716	3,309	4,136
East Timor	14,874	0.9	-	-		0
Georgia	69,700	5.1	3,937	772	6,811	1,335
Hong Kong	1,075	6.8	158,596	23,323	38,002	5,589
India	3,287,590	1064.4	598,966	563	510,093	479
Indonesia	1,904,569	214.5	208,311	971	92,384	431
Iran	1,633,188	66.1	136,833	2,070	119,930	1,814
Iraq	438,317	24.7	227,229	9,200	31,610	1,280
Israel	21,056	6.7	103,639	15,469	38,295	5,716
Japan	377,801	127.2	4,326,444	34,013	970,959	7,633
Jordan	97,740	5.3	9,860	1,860	7,094	1,338
Kazakhstan	2,717,300	14.9	29,749	1,997	53,077	3,562
Korea, North	120,538	22.6	5,997	265	31,263	1,383
Korea, South	99,274	47.9	605,331	12,637	267,441	5,583
Kuwait	17,818	2.4	35,369	14,737	30,164	12,568
Kyrgyzstan	198,500	5.1	1,737	341	10,214	2,003
Laos	236,800	5.7	2,036	357	3036	533
Lebanon	10,400	4.5	19,000	4,222	8,591	1,909
Macau	18	0.4	6335	15,838	1,601	4,003

continued...

Asia: Basic Demographics and Power Loading, by Country - continued

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Malaysia	329,758	24.8	103,161	4,160	62,123	2,505
Maldives	298	0.3	674	2,247	116	387
Mongolia	1,566,500	2.5	1188	475	2,853	1,141
Myanmar	676,578	49.4	108,199	2,190	5,638	114
Nepal	147,181	24.7	5,835	236	2005	81
Oman	212,457	2.6	19,877	7,645	9,098	3,499
Pakistan	796,095	148.4	68,815	464	62,961	424
Philippines	300,000	81.5	80,574	989	42,384	520
Qatar	11,000	0.6	7,679	12,798	9,046	15,077
Saudi Arabia	2,149,690	22.5	188,479	8,377	128,512	5,712
Singapore	618	4.3	91,342	21,242	29,931	6,961
Sri Lanka	65,610	19.2	18,514	964	6,228	324
Syria	185,180	17.4	21,517	1,237	24,315	1,397
Tajikistan	143,100	6.3	1303	207	14,407	2,287
Thailand	513,115	62	143,163	2,309	95,629	1,542
Turkey	774,815	70.7	237,872	3,365	117,851	1,667
Turkmenistan	488,100	4.3	6,010	1,398	8,908	2,072
United Arab Emirates	83,600	4	58,794	14,699	36,508	9,127
Uzbekistan	447,400	24.6	9,949	404	46,662	1,897
Vietnam	331,689	81.3	39,157	482	32,064	394
Yemen	527,968	19.2	10,833	564	2,827	147

Source: Goulden Reports

7.1.4 South America

Table 122

South America: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Argentina	2,780,400	38.4	129,735	3,379	81,647	2,126
Bolivia	1,098,581	9	8,024	892	3,848	428
Brazil	8,547,403	176.4	492,338	2,791	351,886	1,995
Chile	756,626	15.8	72,416	4,583	41,782	2,644
Colombia	1,138,914	44.4	77,599	1,748	41,135	926
Ecuador	283,561	13	26,913	2,070	10,793	830
Falkland Islands	12,173	0.1	-	-	18	180
French Guiana	90,000	0.2	3,459	17,295	428	2,140
Guyana	214,969	0.8	689	861	751	939
Paraguay	406,752	5.6	5,814	1,038	2,469	441
Peru	1,285,216	27.1	61,011	2,251	20,217	746
Suriname	163,265	0.4	841	2,103	1,845	4,613
Uruguay	177,414	3.4	11,182	3,289	7,152	2,104
Venezuela	912,050	25.5	84,793	3,325	80,932	3,174

Source: Goulden Reports

7.1.5 North and Central America and Caribbean

Table 123

North & Central America & Caribbean: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Antigua & Barbuda	442	0.7	719	1,027	103	147
Aruba	193	0.9	-	-	751	834
Bahamas	13,878	0.3	4,682	15,607	1596	5,320
Barbados	430	0.3	2,512	8,373	744	2,480
Belize	22,696	0.2	807	4,035	109	545
Bermuda	53	0.1	2,227	22,270	598	5,980
British Virgin Islands	153	0.1	268	2,680	34	340
Canada	9,970,610	31.6	834,390	26,405	487,304	15,421
Cayman Islands	264	0.1	582	5,820	382	3,820
Costa Rica	51,100	4	17,482	4,371	5,733	1,433
Cuba	110,861	11.3	21,737	1,924	13,404	1,186
Dominica	751	0.1	238	2,380	64	640
Dominican Republic	48,734	8.7	15,915	1,829	8,912	1,024
El Salvador	21,041	6.5	14,396	2,215	4,375	673
Greenland	2,175,600	0.1	-	-	228	2,280
Grenada	344	0.1	396	3,960	139	1,390
Guadeloupe	1,705	0.4	3,877	9,693	1,079	2,698
Guatemala	108,889	12.3	24,730	2,011	5,760	468
Haiti	27,750	8.4	2,745	327	575	68
Honduras	112,088	7	6,978	997	3,771	539
Jamaica	10,990	2.6	7,817	3,007	5,849	2,250
Martinique	1,102	0.4	4,832	12,080	1095	2,738
Mexico	1,958,201	102.3	626,080	6,120	189,662	1,854
Montserrat	102	0.1	70	700	2	20
Netherlands Antilles	800	0.2	1,754	8,770	934	4,670
Nicaragua	130,000	5.5	4,100	745	2,318	421
Panama	75,517	3	12,916	4,305	4,473	1,491

continued...

North & Central America & Caribbean: Basic Demographics and Power Loading, by Country - continued

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
Puerto Rico	8,897	3.9	42,057	10,784	20,539	5,266
St. Kitts & Nevis	261	0.1	321	3,210	98	980
St. Lucia	622	0.2	650	3,250	251	1,255
St. Pierre & Miquelon	242	0.1	-	-	40	400
St. Vincent & Grenadines	388	0.1	361	3,610	85	850
Trinidad & Tobago	5,130	1.3	9,538	7,337	5,341	4,108
Turks & Caicos Islands	430	0.1	-	-	5	50
USA	9,363,520	291	10,881,609	37,394	3,659,989	12,577
US Virgin Islands	347	0.1	-	-	963	9,630

Source: Goulden Reports

7.1.6 Oceania

Table 124

Oceania: Basic Demographics and Power Loading, by Country

Country	Country Area (sq.km)	Population (millions) 2007	GDP (US\$ millions) 2007	GDP per Capita (US\$) 2007	Load (GWh) 2006	Average Load (kWh/capita) 2006
American Samoa	199	0.1	-	-	113	1,130
Australia	7,741,220	19.8	518,382	26,181	195,594	9,878
Cook Islands	236	0.1	103	1,030	25	250
Fiji	18,274	0.8	1,969	2,461	698	873
French Polynesia	4,000	0.2	4,040	20,200	353	1,765
Guam	549	0.2	-	-	777	3,885
Kiribati	726	0.1	51	510	7	70
Nauru	21	0.01	368	36,800	28	2,800
New Caledonia	18,575	0.2	3,520	17,600	1,471	7,355
New Zealand	270,534	4	76,256	19,064	35,706	8,927
Niue	260	0.02	-	-	3	150
Palau	459	0.02	109	5,450	208	10,400
Papua New Guinea	462,840	5.5	3,395	617	1,561	284
Samoa	2,831	0.2	284	1,420	113	565
Solomon Islands	28,896	0.4	276	690	30	75
Tonga	747	0.1	172	1,720	23	230
Vanuatu	12,189	0.2	248	1,240	45	225

Source: Goulden Reports

7.2 EXCHANGE RATES

Table 125

Exchange Rates for Major Currencies against US Dollar 2004-2009

Currency	2004†	2005†	2006*	2007*	2008*	2009*
Argentinean Peso	1	3.6	2.99	2.96	3.17	3.74
Australian Dollar	1.91	1.75	1.54	1.36	1.19	1.28
Austrian Schilling	15.12	See €	See €	See €	See €	See €
Belgian Franc	44.32	See €	See €	See €	See €	See €
Brazilian Real	2.09	2.78	3.12	2.93	1.84	2.01
British Pound	0.69	0.67	0.61	0.55	0.55	0.64
Canadian Dollar	1.54	1.53	1.4	1.3	1.07	1.14
Chinese Yuan	8.28	8.29	8.29	8.29	6.96	6.84
Czech Koruna	38.12	32.56	28.23	25.73	17.10	19.1
Danish Kroner	8.2	7.7	6.58	5.99	5.09	5.36
Dutch Guilder	2.42	See €	See €	See €	See €	See €
Egyptian Pound	3.88	4.66	5.91	6.24	5.49	5.60
Euro	1.1	1.04	0.89	0.81	0.68	0.72
Finnish Markka	6.53	See €	See €	See €	See €	See €
French Franc	7.21	See €	See €	See €	See €	See €
German Mark	2.15	See €	See €	See €	See €	See €
Greek Drachma	374.39	See €	See €	See €	See €	See €
Hong Kong Dollar	7.8	7.8	7.79	7.79	7.79	7.75
Indian Rupee	46.69	49	46.66	45.34	43.81	48.85
Indonesian Rupiah	10,321.92	8,621.80	8,592.80	8,945.80	9,684.9	10428.9
Irish Punt	0.86	See €	See €	See €	See €	See €
Israeli Shekel	4.15	4.98	4.55	4.49	3.59	3.93
Italian Lira	2,127.27	See €	See €	See €	See €	See €
Japanese Yen	120.08	123.52	115.98	108.17	103.47	93.61
Malaysian Ringgit	3.8	3.8	3.8	3.8	3.34	3.53
Mexican Peso	9.54	9.92	10.81	11.31	11.16	13.52
New Zealand Dollar	2.35	2.03	1.72	1.51	1.43	1.59
Nigerian Naira	117.71	124.19	133.1	133.5	120.19	150.96
Norwegian Kroner	8.96	7.65	7.08	6.74	5.65	6.29
Polish Zloty	4.06	4.02	3.89	3.65	2.41	3.12
Portuguese Escudo	220.26	See €	See €	See €	See €	See €
Russian Rouble	28.72	31.43	30.7	28.81	24.87	31.82
Saudi Riyal	3.75	3.75	3.75	3.75	3.75	3.75
South African Rand	7.9	10.47	7.57	6.46	8.27	8.44
South Korean Won	1,289.12	1,220.10	1194.5	1150.9	1102.8	1279.01
Spanish Peseta	182.8	See €	See €	See €	See €	See €
Swedish Kroner	9.92	9.39	8.08	7.35	6.59	7.65
Swiss Franc	1.68	1.52	1.35	1.24	1.08	1.09
Taiwanese Dollar	32.71	34.02	34.48	33.47	31.56	33.07
Thai Baht	44.12	42.08	41.6	40.31	33.27	34.57
Turkish Lira	934,904	1,585,170	1.53	1.45	1.31	1.56

*Average rates January to December

†Average Rates January to June

Source: OANDA, HSBC Library and Goulden Reports

7.3 ESTIMATED PRODUCTION BY COMPANY BY COUNTRY

The estimates below are a second attempt to complete such an analysis worldwide. As with the first edition Reports would welcome any feedback, amendments and corrections to this table.

Table 126

Estimated production by Country by Company-2010 (US\$ Million)

Country	Company	2010 Production US\$ Million
WESTERN EUROPE		
Austria		
Belgium		
Denmark		
Finland		
France		

continued

Germany
Greece
Ireland
Italy
Netherlands
Norway
Portugal

Continued

Spain
Sweden
Switzerland
United Kingdom
Bulgaria
Croatia
Czech Republic

continued

Hungary
Poland
Romania
Serbia
Slovakia
Slovenia
Belarus
Estonia
Russia

continued

Ukraine
AFRICA
Egypt
Morocco
Tunisia
South Africa
MIDDLE EAST
Iran
Israel

continued

Saudi Arabia
Turkey
United Arab Emirates
NEAR EAST
India
Pakistan
FAR EAST
China

continued

Indonesia
Japan
Korea, North

continued

Korea, South**Malaysia****Philippines****Taiwan****Thailand**

continued

SOUTH AMERICA	
Argentina	
Brazil	
Chile	
Colombia	
Peru	
Canada	
Mexico	

continued

USA
AUSTRALASIA
Australia
New Zealand
World

Source: Goulden Reports Estimates

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