

## Table of contents

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>MARKET OVERVIEW AND RECENT DEVELOPMENTS .....</b> | <b>1</b>  |
| 1.1      | SCHEDULED REPOWERINGS .....                          | 3         |
| 1.2      | NEW ENTRY AND RETIREMENTS .....                      | 4         |
| 1.3      | VESTING CONTRACTS .....                              | 5         |
| 1.4      | LNG TERMINAL .....                                   | 6         |
| 1.5      | ELECTRICITY FUTURES MARKET .....                     | 7         |
| 1.6      | DEMAND RESPONSE DEVELOPMENT .....                    | 8         |
| 1.7      | HISTORICAL LOAD .....                                | 8         |
| 1.8      | MARKET PERFORMANCE .....                             | 10        |
| <b>2</b> | <b>MODELING ASSUMPTIONS.....</b>                     | <b>12</b> |
| 2.1      | MARKET TOPOLOGY.....                                 | 12        |
| 2.2      | FUEL PRICE PROJECTIONS.....                          | 13        |
| 2.3      | EMISSIONS COSTS .....                                | 14        |
| 2.4      | COST OF GENERIC NEW ENTRY .....                      | 14        |
| 2.5      | IMPORT AND EXPORT FLOWS .....                        | 17        |
| 2.6      | DEMAND .....   | 17        |
| 2.7      | SUPPLY .....   | 17        |
| <b>3</b> | <b>10-YEAR PRICE FORECAST .....</b>                  | <b>20</b> |
| 3.1      | ENERGY MARKET PRICES.....                            | 20        |
| 3.2      | IMPLIED MARKET HEAT RATE .....                       | 21        |
|          | <b>APPENDIX: LEI MODELING TOOLS .....</b>            | <b>22</b> |

## List of figures

|            |   |    |
|------------|---|----|
| FIGURE 1.  | INSTALLED CAPACITY AND GENERATION BY TECHNOLOGY TYPE, 2011 .....          | 1  |
| FIGURE 2.  | SIMPLIFIED DEPICTION OF MARKET STRUCTURE .....                            | 2  |
| FIGURE 3.  | INSTALLED CAPACITY BY MARKET PLAYER (MW), 2011 .....                      | 3  |
| FIGURE 4.  | LICENSED AND INSTALLED CAPACITY OF MAJOR GENCOs IN SINGAPORE.....         | 4  |
| FIGURE 5.  | PROPOSED NEW GENERATION.....  | 5  |
| FIGURE 6.  | VESTING CONTRACT ROLLBACK SCHEDULE VS. ACTUAL LEVEL, 2004-2014.....       | 6  |
| FIGURE 7.  | MONTHLY PEAK DEMAND, 2007-2011 .....                                      | 9  |
| FIGURE 8.  | HISTORICAL ELECTRICITY DEMAND AND PEAK DEMAND, 2007-2011 .....            | 10 |
| FIGURE 9.  | HISTORICAL DAILY AVERAGE USEP, 2007-2012 (\$\$/MWH).....                  | 11 |
| FIGURE 10. | MONTH AVERAGE USEP COMPARISON FOR SELECTED YEARS (\$\$/MWH) .....         | 11 |
| FIGURE 11. | SINGAPORE TRANSMISSION PLANNING ZONES.....                                | 12 |
| FIGURE 12. | FOSSIL FUEL PRICE PROJECTIONS, HHV (NOMINAL \$/MMBTU OR \$/BARREL).....   | 14 |
| FIGURE 13. | PROJECTED VESTING CONTRACT PRICES (LRMC) .....                            | 16 |
| FIGURE 14. | PROJECTED LOAD, 2013-2022 .....   | 17 |
| FIGURE 15. | SUPPLY-DEMAND BALANCE .....   | 18 |
| FIGURE 16. | INTERNAL RESERVE MARGINS .....  | 19 |
| FIGURE 17. | INDICATIVE SUPPLY CURVE (2017), SINGAPORE.....                            | 19 |
| FIGURE 18. | FORECAST ENERGY MARKET PRICES, 2013 THROUGH 2022 (NOMINAL \$\$/MWH) ..... | 20 |
| FIGURE 19. | FORECAST MARKET HEAT RATE, 2011 THROUGH 2020 .....                        | 21 |
| FIGURE 20. | POOLMOD'S TWO-STAGE PROCESS.....  | 22 |