

## Table of contents

|   |           |
|---|-----------|
| <b>REPORT CONTENTS</b> .....  | <b>12</b> |
| <b>EXECUTIVE SUMMARY</b> .....  | <b>13</b> |
| <b>Storage: a vital segment of the gas chain</b> .....  | <b>13</b> |
| <b>In liberalized markets, UGS competes with other flexibility tools</b> .....                | <b>13</b> |
| <b>Global underground gas storage trends: Asia and the Middle East drive the growth</b> ..... | <b>15</b> |
| <b>FSRUs allow a growing number of countries to access the LNG market</b> .....               | <b>16</b> |
| <b>Regional development</b> .....   | <b>18</b> |
| <b>PART I – CURRENT AND FUTURE UGS AND LNG STORAGE TRENDS</b> .....                           | <b>23</b> |
| <b>Introduction: the Underground Gas Storage and LNG Storage Market</b> .....                 | <b>24</b> |
| <b>Overview of underground gas storage in the world</b> .....                                 | <b>26</b> |
| <b>Current capacity</b> .....   | <b>26</b> |
| A sustained growth.....   | 26        |
| Three main markets.....   | 26        |
| Depleted fields dominate.....   | 27        |
| <b>Historical development of UGS capacity in the world</b> .....                              | <b>28</b> |
| <b>Panorama of UGS facilities in the world</b> .....  | <b>30</b> |
| <b>Future underground gas storage capacity</b> .....  | <b>32</b> |
| <b>WORLD</b> .....  | <b>32</b> |
| Global gas demand prospects: high global growth and contrasted regional development.....      | 32        |
| Global storage trends: a sustained growth by 2035 driven by China and Iran.....               | 33        |
| Storage projects.....   | 36        |
| <b>NORTH AMERICA</b> .....  | <b>40</b> |
| Major supply and demand trends.....   | 40        |
| Main trends in future storage.....  | 41        |
| Challenges.....   | 43        |
| Planned projects.....   | 44        |
| <b>CENTRAL AND SOUTH AMERICA</b> .....  | <b>44</b> |
| Gas market and storage trends.....  | 44        |
| <b>EUROPE</b> .....   | <b>46</b> |
| Major supply and demand trends.....   | 46        |
| Main European storage trends.....   | 49        |
| <b>CIS</b> .....  | <b>64</b> |
| Major supply and demand trends.....   | 64        |
| Main storage trends and prospects.....  | 65        |
| Future storage capacity and projects.....   | 66        |
| Current projects under construction and planned.....  | 66        |
| <b>MIDDLE EAST</b> .....  | <b>68</b> |
| Gas market and storage trends.....  | 68        |
| <b>ASIA-OCEANIA</b> .....   | <b>69</b> |
| Major supply and demand trends.....   | 69        |
| Main storage trends and prospects.....  | 70        |
| Asia-Oceania: the largest growth prospects in the world.....                                  | 77        |
| <b>World storage at LNG receiving terminals</b> .....   | <b>79</b> |
| <b>Growing LNG trade</b> .....  | <b>79</b> |
| <b>A turnaround in the global LNG market</b> .....  | <b>79</b> |
| <b>Regasification terminals</b> .....   | <b>82</b> |
| Growing regasification capacity.....  | 82        |
| Asian leadership.....   | 84        |
| Europe: LNG come-back.....  | 86        |
| North America: a radical shift from importer to exporter.....                                 | 86        |

|  |            |
|--|------------|
| New regions are entering the LNG import scene.....   | 87         |
| Global outlook for receiving terminals.....  | 87         |
| <b>FSRUs add flexibility in the market</b> .....   | <b>90</b>  |
| <b>Storage capacity at LNG regasification terminals</b> .....                                    | <b>92</b>  |
| <b>PART II – A CHANGING LANDSCAPE FOR THE STORAGE MARKET IN EUROPE</b> .....                     | <b>96</b>  |
| <b>Introduction</b> .....  | <b>97</b>  |
| <b>The functions and values of storage</b> .....   | <b>98</b>  |
| <b>The multiple functions of UGS</b> .....   | <b>98</b>  |
| Adjustment between seasonal and peak demand.....   | 98         |
| ‘System’ optimization and safety .....   | 99         |
| Ensuring security of supply .....  | 100        |
| Price arbitrage: seasonal and flex spreads.....  | 100        |
| <b>Competition in the wider flexibility market</b> .....   | <b>102</b> |
| <b>Market valuation of gas storage: the missing values</b> .....                                 | <b>104</b> |
| <b>Different flexibility models</b> .....  | <b>106</b> |
| <b>Recent gas supply and demand trends in Europe</b> .....                                       | <b>110</b> |
| <b>A sharp decline in gas demand</b> .....   | <b>110</b> |
| Total demand .....   | 110        |
| Seasonal and peak demand.....  | 112        |
| <b>A structural decline in EU gas production, accelerated by Groningen production cuts</b> ..... | <b>113</b> |
| The impact of the reduction in Groningen production on the European gas markets.....             | 114        |
| The L-gas market in northwest Europe .....   | 115        |
| Exports, flexibility and prices .....  | 116        |
| <b>LNG makes its comeback</b> .....  | <b>118</b> |
| <b>Security of supply: high on the agenda</b> .....  | <b>122</b> |
| Russian gas exports and geopolitical tensions.....   | 123        |
| <b>Greater interconnectivity</b> .....   | <b>124</b> |
| <b>Oversupply in flexibility</b> .....   | <b>127</b> |
| <b>Review of EU current storage capacity and recent trends</b> .....                             | <b>129</b> |
| <b>EU underground gas storage capacity in 2015</b> .....   | <b>129</b> |
| <b>Historical development and recent trends</b> .....  | <b>129</b> |
| <b>Fast development of salt cavern storage</b> .....   | <b>131</b> |
| <b>Contrasted European situations</b> .....  | <b>132</b> |
| <b>Concerns about filling levels</b> .....   | <b>134</b> |
| <b>Uneven utilization rates</b> .....  | <b>138</b> |
| <b>A fundamental role to cover seasonal and peak demand</b> .....                                | <b>139</b> |
| <b>A fundamental role in security of gas supply</b> .....  | <b>141</b> |
| The Russia-Ukraine gas crisis of 2009 .....  | 141        |
| The cold spell in the first half of February 2012.....   | 142        |
| Role of storage during the extended cold weather of March/April 2013.....                        | 142        |
| <b>Adaptation by SSOs and storage developers</b> .....   | <b>144</b> |
| <b>A sharp drop in storage prices</b> .....  | <b>144</b> |
| Centrica Storage Limited offer .....   | 144        |
| GasTerra auctions.....   | 144        |
| Impact on storage operators.....   | 145        |
| <b>More innovative and flexible products</b> .....   | <b>146</b> |
| <b>New investments are postponed/put on hold, and even cancelled</b> .....                       | <b>147</b> |
| <b>Mothballing and closure of storage assets</b> .....   | <b>149</b> |
| <b>ANNEX 1: New innovative storage products</b> .....  | <b>151</b> |
| <b>Regulatory developments on the EU storage market</b> .....                                    | <b>153</b> |
| <b>The updated Gas Target Model</b> .....  | <b>153</b> |
| Two new concepts for wholesale markets.....  | 153        |

|   |            |
|---|------------|
| Measures to make the most appropriate use of gas storage .....                                | 154        |
| <b>The Third Energy Package .....</b>   | <b>155</b> |
| Third-party access (Art. 33 of Directive 2009/73/EC) .....                                    | 155        |
| Unbundling (Art. 15 of Directive 2009/73/EC) .....  | 157        |
| Transparency (art. 19 of Regulation 715/2009/EC) .....  | 157        |
| Guidelines of Good Practice for Storage System Operators (GGPSSOs) .....                      | 157        |
| GSE Transparency Template .....   | 158        |
| <b>Network codes .....</b>  | <b>159</b> |
| Implementation of the network codes .....   | 159        |
| Possible impact on the storage market.....  | 161        |
| <b>CEER Vision on Regulatory arrangements for the gas storage market .....</b>                | <b>163</b> |
| <b>Policy developments: The Energy Security Package .....</b>                                 | <b>166</b> |
| <b>The EC Energy Security Strategy and the Energy Union’s framework strategy .....</b>        | <b>166</b> |
| <b>Stress tests conducted by the European Commission and ENTSOG in 2014 .....</b>             | <b>167</b> |
| <b>The Energy Security Package .....</b>  | <b>169</b> |
| Proposal to review the Security of Gas Supply Regulation .....                                | 169        |
| Proposal for a revised decision on Intergovernmental agreements in the field of energy .....  | 175        |
| Strategy for LNG & Storage .....  | 175        |
| The Next steps.....   | 179        |
| <b>ANNEX 2: Security of supply and storage measures .....</b>                                 | <b>181</b> |
| <b>Conclusion and way forward.....</b>  | <b>185</b> |
| <b>PART III - COUNTRY ANALYSIS.....</b>   | <b>190</b> |
| <b>Underground Gas Storage and LNG Receiving Terminals in North America .....</b>             | <b>191</b> |
| <b>CANADA.....</b>  | <b>191</b> |
| Recent development in the Canadian gas market .....   | 191        |
| Overview of underground gas storage in Canada .....   | 192        |
| Storage projects .....  | 197        |
| Evolution of underground gas storage utilization .....  | 199        |
| LNG receiving terminals .....   | 200        |
| Legal framework and access to storage .....   | 200        |
| <b>MEXICO.....</b>  | <b>202</b> |
| Recent development in the Mexican gas market .....  | 202        |
| Overview of underground gas storage in Mexico .....   | 204        |
| LNG receiving terminals .....   | 205        |
| <b>UNITED STATES.....</b>   | <b>207</b> |
| Recent changes in the US gas market .....   | 207        |
| Overview of underground gas storage in the United States.....                                 | 209        |
| Historical development of storage in the United States.....                                   | 210        |
| Regional distribution of storage.....   | 212        |
| A fast growth in salt cavern storage.....   | 214        |
| Recent storage activity and impact on gas prices .....  | 216        |
| Storage operators in the United States.....   | 217        |
| Storage projects .....  | 218        |
| LNG receiving terminals .....   | 219        |
| Legal framework and access to storage .....   | 220        |
| <b>Underground Gas Storage and LNG Receiving Terminals in Central and South America .....</b> | <b>224</b> |
| <b>ARGENTINA .....</b>  | <b>224</b> |
| Recent development in the Argentine gas market .....  | 224        |
| Overview of underground gas storage in Argentina .....  | 225        |
| LNG terminals and storage.....  | 226        |
| <b>BRAZIL.....</b>  | <b>228</b> |
| Recent development in the Brazilian gas market .....  | 228        |

|  |            |
|--|------------|
| Overview of underground gas storage in Brazil .....                          | 229        |
| LNG terminals and storage .....  | 230        |
| <b>OTHER CENTRAL AND SOUTH AMERICAN COUNTRIES.....</b>                       | <b>231</b> |
| <b>Underground Gas Storage and LNG Receiving Terminals in Europe .....</b>   | <b>233</b> |
| <b>ALBANIA.....</b>  | <b>233</b> |
| Recent development in the Albanian gas market .....                          | 233        |
| Overview of gas storage in Albania .....                                     | 234        |
| LNG projects .....   | 234        |
| <b>AUSTRIA.....</b>  | <b>236</b> |
| Recent development in the Austrian gas market.....                           | 236        |
| Overview of gas storage in Austria.....                                      | 237        |
| Storage projects .....   | 238        |
| Legal framework and access to storage .....                                  | 240        |
| <b>BELGIUM .....</b>   | <b>241</b> |
| Recent development in the Belgium gas market .....                           | 241        |
| Overview of gas storage in Belgium .....                                     | 242        |
| LNG terminals and projects.....  | 244        |
| Legal framework and access to underground gas storage and LNG terminals..... | 244        |
| <b>BOSNIA AND HERZEGOVINA .....</b>  | <b>247</b> |
| Recent development in the Bosnian gas market .....                           | 247        |
| Overview of gas storage in Bosnia .....                                      | 247        |
| <b>BULGARIA .....</b>  | <b>248</b> |
| Recent development in the Bulgarian gas market.....                          | 248        |
| Overview of UGS in Bulgaria .....  | 249        |
| Storage projects .....   | 250        |
| Legal framework and access to storage .....                                  | 251        |
| <b>CROATIA.....</b>  | <b>253</b> |
| Recent development in the Croatian gas market .....                          | 253        |
| Overview of gas storage in Croatia .....                                     | 254        |
| Storage projects .....   | 254        |
| LNG projects.....  | 255        |
| Legal framework and access to underground storage and LNG .....              | 256        |
| <b>CZECH REPUBLIC .....</b>  | <b>258</b> |
| Recent development in the Czech gas market.....                              | 258        |
| Overview of gas storage in the Czech Republic .....                          | 259        |
| Storage projects .....   | 260        |
| Legal framework and access to underground gas storage and LNG .....          | 262        |
| <b>DENMARK .....</b>   | <b>264</b> |
| Recent development in the Danish gas market .....                            | 264        |
| Overview of gas storage in Denmark .....                                     | 265        |
| Legal framework and access to underground gas storage and LNG .....          | 267        |
| <b>FRANCE .....</b>  | <b>269</b> |
| Recent development in the French gas market .....                            | 269        |
| Overview of gas storage in France .....                                      | 272        |
| Storage projects .....   | 274        |
| LNG terminals and projects.....  | 279        |
| Legal framework and access to underground storage and LNG .....              | 279        |
| <b>GERMANY .....</b>   | <b>283</b> |
| Recent development in the German gas market .....                            | 283        |
| Overview of gas storage in Germany .....                                     | 286        |
| Storage projects .....   | 290        |
| LNG .....  | 294        |

|  |            |
|--|------------|
| Legal framework and access to storage .....                      | 295        |
| Security of supply and gas storage .....                         | 295        |
| <b>GREECE.....</b>   | <b>301</b> |
| Recent development in the Greek gas market .....                 | 301        |
| Overview of gas storage in Greece.....                           | 303        |
| LNG terminals and storage.....                                   | 304        |
| Legal framework and access to LNG terminals .....                | 305        |
| <b>HUNGARY.....</b>  | <b>306</b> |
| Recent development in the Hungarian gas market .....             | 306        |
| Overview of gas storage in Hungary .....                         | 308        |
| Use of storage .....   | 309        |
| Legal framework and access to storage .....                      | 310        |
| <b>ITALY.....</b>  | <b>312</b> |
| Recent development in the Italian gas market .....               | 312        |
| New investment incentives .....                                  | 315        |
| Overview of gas storage in Italy .....                           | 316        |
| Storage projects .....   | 317        |
| LNG terminals.....   | 320        |
| Legal framework and access to storage and LNG terminals .....    | 322        |
| <b>LATVIA .....</b>  | <b>324</b> |
| Recent development in the Latvian gas market.....                | 324        |
| Overview of gas storage in Latvia.....                           | 324        |
| LNG projects.....  | 325        |
| Legal framework and access to storage .....                      | 325        |
| <b>LITHUANIA .....</b>   | <b>327</b> |
| Recent development in the Lithuanian gas market .....            | 327        |
| Overview of gas storage in Lithuania .....                       | 328        |
| LNG terminal .....   | 329        |
| Legal framework and access to storage and LNG .....              | 330        |
| <b>NETHERLANDS.....</b>  | <b>332</b> |
| Recent development in the Dutch gas market.....                  | 332        |
| Overview of gas storage in the Netherlands.....                  | 336        |
| LNG terminals and storage.....                                   | 337        |
| Legal framework and access to storage and LNG terminals .....    | 338        |
| <b>POLAND .....</b>  | <b>340</b> |
| Recent development in the Polish gas market.....                 | 340        |
| Overview of gas storage in Poland .....                          | 342        |
| Storage projects .....   | 344        |
| LNG projects.....  | 345        |
| Legal framework and access to storage and LNG terminals .....    | 345        |
| Mandatory stocks of natural gas.....                             | 346        |
| <b>PORTUGAL .....</b>  | <b>347</b> |
| Recent development in the Portuguese gas market.....             | 347        |
| Overview of gas storage in Portugal .....                        | 348        |
| Storage projects .....   | 348        |
| LNG terminal .....   | 348        |
| Legal framework and access to storage and LNG .....              | 349        |
| <b>REPUBLIC OF IRELAND .....</b>                                 | <b>351</b> |
| Recent development in the Republic of Ireland's gas market ..... | 351        |
| Overview of gas storage in the Republic of Ireland .....         | 352        |
| Storage projects .....   | 352        |
| LNG projects.....  | 353        |

|  |            |
|--|------------|
| Legal framework and access to storage and LNG .....                            | 354        |
| <b>ROMANIA.....</b>  | <b>355</b> |
| Recent development in the Romanian gas market.....                             | 355        |
| Overview of gas storage in Romania.....  | 357        |
| Storage projects .....   | 358        |
| LNG terminal .....   | 359        |
| Legal framework and access to storage.....                                     | 359        |
| <b>SERBIA .....</b>  | <b>361</b> |
| Recent development in the Serbian gas market.....                              | 361        |
| Overview of UGS in Serbia .....  | 362        |
| Legal framework and access to storage.....                                     | 364        |
| <b>SLOVAK REPUBLIK .....</b>   | <b>365</b> |
| Recent development in the Slovak gas market.....                               | 365        |
| Overview of UGS in Slovakia .....  | 367        |
| Storage development.....   | 368        |
| Legal framework and access to storage.....                                     | 369        |
| <b>SPAIN .....</b>   | <b>370</b> |
| Recent development in the Spanish gas market.....                              | 370        |
| Overview of gas storage in Spain .....   | 372        |
| Storage projects .....   | 372        |
| LNG terminals and storage.....   | 374        |
| Legal framework and access to storage and LNG terminals .....                  | 375        |
| <b>SWEDEN .....</b>  | <b>377</b> |
| Recent development in the Swedish gas market.....                              | 377        |
| Overview of gas storage in Sweden .....  | 378        |
| LNG terminals.....   | 378        |
| Legal framework and access to storage and LNG terminals .....                  | 379        |
| <b>TURKEY .....</b>  | <b>380</b> |
| Recent development in the Turkish gas market .....                             | 380        |
| Overview of UGS in Turkey.....   | 383        |
| Storage projects .....   | 383        |
| LNG terminals.....   | 385        |
| Legal framework and access to storage and LNG terminals .....                  | 386        |
| <b>UNITED KINGDOM .....</b>  | <b>388</b> |
| Recent development in the UK gas market.....                                   | 388        |
| Overview of gas storage in the United Kingdom.....                             | 391        |
| Storage projects .....   | 393        |
| LNG terminals and storage.....   | 397        |
| Legal framework and access to storage and LNG terminals .....                  | 399        |
| <b>OTHER EUROPEAN COUNTRIES WITH PROJECTS OF LNG RECEIVING TERMINALS .....</b> | <b>401</b> |
| <b>Underground Gas Storage and LNG Receiving Terminals in the CIS.....</b>     | <b>402</b> |
| <b>ARMENIA .....</b>   | <b>402</b> |
| Recent development in the Armenian gas market .....                            | 402        |
| Overview of underground gas storage in Armenia .....                           | 402        |
| <b>AZERBAIJAN .....</b>  | <b>403</b> |
| Recent development in the Azerbaijan's gas market .....                        | 403        |
| Overview of underground gas storage in Azerbaijan.....                         | 403        |
| Storage projects .....   | 404        |
| Storage for other countries.....   | 404        |
| <b>BELARUS .....</b>   | <b>406</b> |
| Recent development in the Belarusian gas market .....                          | 406        |
| Overview of underground gas storage in Belarus.....                            | 406        |

|   |            |
|---|------------|
| Storage projects .....  | 406        |
| <b>GEORGIA .....</b>  | <b>408</b> |
| Recent development in the Georgian gas market .....                                 | 408        |
| Overview of underground gas storage projects in Georgia .....                       | 408        |
| <b>KAZAKHSTAN.....</b>  | <b>409</b> |
| Recent development in the Kazakhstan's gas market .....                             | 409        |
| Overview of underground gas storage in Kazakhstan.....                              | 410        |
| <b>KYRGYZSTAN .....</b>   | <b>412</b> |
| Recent development in the Kyrgyz gas market.....                                    | 412        |
| Overview of underground gas storage in Kyrgyzstan .....                             | 412        |
| <b>RUSSIA .....</b>   | <b>413</b> |
| Recent development in the Russian gas market.....                                   | 413        |
| Overview of underground gas storage in Russia.....                                  | 417        |
| Storage projects .....  | 421        |
| LNG receiving terminals .....   | 423        |
| Gazprom storage in Europe.....  | 423        |
| <b>UKRAINE .....</b>  | <b>427</b> |
| Recent development in the Ukrainian gas market.....                                 | 427        |
| Overview of underground gas storage in Ukraine .....                                | 431        |
| The role of gas storage and security of supply.....                                 | 432        |
| LNG receiving terminals .....   | 434        |
| Regulatory framework .....  | 434        |
| Future use of storage facilities.....   | 436        |
| <b>UZBEKISTAN .....</b>   | <b>437</b> |
| Recent development in the Uzbek gas market .....                                    | 437        |
| Overview of underground gas storage in Uzbekistan .....                             | 438        |
| <b>Underground Gas Storage and LNG Receiving Terminals in Africa .....</b>          | <b>439</b> |
| <b>Underground Gas Storage and LNG Receiving Terminals in the Middle East .....</b> | <b>442</b> |
| <b>IRAN.....</b>  | <b>442</b> |
| Recent development in the Iranian gas market.....                                   | 442        |
| Overview of gas storage in Iran.....  | 443        |
| <b>OTHER MIDDLE EASTERN COUNTRIES.....</b>  | <b>446</b> |
| <b>Underground Gas Storage and LNG Receiving Terminals in Asia-Oceania .....</b>    | <b>449</b> |
| <b>AUSTRALIA .....</b>  | <b>449</b> |
| Recent changes in the Australian gas market .....                                   | 449        |
| Overview of underground gas storage in Australia.....                               | 451        |
| Storage projects .....  | 453        |
| <b>CHINA .....</b>  | <b>455</b> |
| Recent development in the Chinese gas market .....                                  | 455        |
| Overview of underground gas storage in China.....                                   | 458        |
| Storage development lags behind gas consumption and transportation trends .....     | 464        |
| LNG terminals and storage.....  | 464        |
| <b>INDIA .....</b>  | <b>467</b> |
| Recent changes in the Indian gas market .....                                       | 467        |
| Overview of underground gas storage in India.....                                   | 468        |
| LNG terminals and storage.....  | 469        |
| <b>JAPAN .....</b>  | <b>471</b> |
| Recent changes in the Japanese gas market.....                                      | 471        |
| Overview of underground gas storage in Japan.....                                   | 472        |
| Storage projects .....  | 473        |
| LNG terminals and storage.....  | 474        |
| <b>NEW ZEALAND.....</b>   | <b>476</b> |



|  |            |
|--|------------|
| Recent changes in the New Zealand gas market .....                   | 476        |
| Overview of underground gas storage in New Zealand.....              | 476        |
| <b>PAKISTAN .....</b>  | <b>478</b> |
| Recent changes in the Pakistan gas market .....                      | 478        |
| Overview of underground gas storage in Pakistan .....                | 480        |
| LNG terminals and storage.....                                       | 481        |
| <b>SOUTH KOREA .....</b>   | <b>482</b> |
| Recent changes in the South Korean gas market.....                   | 482        |
| Overview of underground gas storage in South Korea .....             | 483        |
| LNG terminals and storage.....                                       | 483        |
| <b>TAIWAN .....</b>  | <b>485</b> |
| Recent changes in the Taiwanese gas market .....                     | 485        |
| Overview of underground gas storage in Taiwan .....                  | 485        |
| LNG terminals and storage.....                                       | 485        |
| <b>OTHER ASIAN COUNTRIES WITH LNG RECEIVING TERMINALS.....</b>       | <b>487</b> |
| <b>ANNEXES.....</b>  | <b>490</b> |
| <b>ANNEX 3: THE DIFFERENT TYPES OF UNDERGROUND GAS STORAGE .....</b> | <b>491</b> |
| Depleted field reservoirs .....                                      | 492        |
| Aquifer reservoirs.....  | 493        |
| Salt caverns .....   | 494        |
| Abandoned mines .....  | 494        |
| Rock caverns.....  | 494        |
| Lined rock caverns (LRC).....  | 495        |
| Unlined rock caverns .....   | 495        |
| LNG caverns.....   | 495        |
| Technological improvements in UGS .....                              | 496        |
| <b>ANNEX 4: Storage terminology and definitions.....</b>             | <b>498</b> |
| <b>ACRONYMS AND ABBREVIATIONS .....</b>                              | <b>500</b> |
| <b>MAIN CONVERSIONS .....</b>  | <b>505</b> |
| <b>LIST OF TABLES, FIGURES, BOXES AND MAPS.....</b>                  | <b>506</b> |
| <b>TABLES .....</b>  | <b>506</b> |
| <b>FIGURES .....</b>   | <b>508</b> |
| <b>BOXES .....</b>   | <b>511</b> |
| <b>MAPS .....</b>  | <b>511</b> |