Activities to Realize Regional Energy and Environmental Securities by Northeast Asian Gas & Pipeline Forum (NAGPF)

Established in 1997, among Japan, China, Korea, Russia and Mongolia

May 13, 2010
Khabarovsk

Dr. Kazuhiko O’Hashi
Secretary General: Northeast Asian Gas & Pipeline Forum
Senior Advisor: Nippon Steel Engineering Co., Ltd.
Chief Researcher: Japan Technical Information Services Corp.
Asian Pipeline Research Society in Japan (APRSJ:1997～2010)～

Asia Pacific Energy Community
Frameworked by Prof. Masaru Hirata
in 1992

President
Shibaura Institute of Technology
May 25, 2005
Meeting with Leaders in Asia

Dr. Mahathir in Malaysia

Dr. Habibie in Indonesia

Dr. Wang Tao
Former Chairman of CNPC, China

Mr. Lee, President of KOGAS

©ERINA
Kovyktinskoye Gas Field in September 01, 1995
Organization of NAGPF

Executive Committee

President:
Mr. Amraa Tsengemaa (Mongolia)

Vice President:
Mr. Shi Xunzhi (China)
Mr. Dal Young Park (South Korea)
Mr. Makoto Haya (Japan)
Prof. Alexander Safronov (Russia)

Secretary General:
Dr. Kazuhiko O’hashi (Japan)

Senior Adviser to the President:
Prof. Hu Jianyi (China)
Mr. L. A. Platonov (Russia)
Mr. Hyun-Bum Sunwoo (KPGA)
Mr. Fumio Sato (Japan)

Ordinary Member:
AGPRCC (China)
KPGA (South Korea)
NAGPF-J (Japan)
PAM (Mongolia)

Sustaining Member:
ROSASIAGAS (Russia)
# International Conference Since 1995

<table>
<thead>
<tr>
<th>No.</th>
<th>Year</th>
<th>Place</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1995</td>
<td>Tokyo, Japan</td>
<td>#1 in Japan</td>
</tr>
<tr>
<td>2</td>
<td>1996</td>
<td>Beijing, China</td>
<td>#1 in China</td>
</tr>
<tr>
<td>3</td>
<td>1997</td>
<td>Seoul, Korea</td>
<td>#1 in Korea</td>
</tr>
<tr>
<td>4</td>
<td>1998</td>
<td>Ulaanbaatar, Mongolia</td>
<td>#1 in Mongolia</td>
</tr>
<tr>
<td>5</td>
<td>1999</td>
<td>Yakutsk, Sakha Republic</td>
<td>#1 in Sakha</td>
</tr>
<tr>
<td>6</td>
<td>2000</td>
<td>Irkutsk, Russia</td>
<td>#1 in Russia</td>
</tr>
<tr>
<td>7</td>
<td>2001</td>
<td>Tokyo, Japan</td>
<td>#2 in Japan</td>
</tr>
<tr>
<td>8</td>
<td>2004</td>
<td>Shanghai, China</td>
<td>#2 in China</td>
</tr>
<tr>
<td>9</td>
<td>2005</td>
<td>Seoul, Korea</td>
<td>#2 in Korea</td>
</tr>
<tr>
<td>10</td>
<td>2007</td>
<td>Novosibirsk, Russia</td>
<td>#2 in Russia</td>
</tr>
<tr>
<td>11</td>
<td>2009</td>
<td>Tokyo, Japan</td>
<td>#3 in Japan</td>
</tr>
<tr>
<td>12</td>
<td>2011</td>
<td>Ulaanbaatar, Mongolia</td>
<td>#2 in Mongolia</td>
</tr>
</tbody>
</table>
A Long-term Vision of Natural Gas Infrastructure in Northeast Asia - 2009 Version -

Table of Contents

Preface
Acknowledgement
Executive Summary ...................................................... 1
Chapter 1 Introduction .................................................. 1
1.1 Background and Objectives ...................................... 1
1.2 Basic Concepts ..................................................... 2
Chapter 2 Current Situation and Prospects of Natural Gas in Northeast Asia
2.1 Russia ............................................................... 3
2.2 China ............................................................... 18
2.3 South Korea ......................................................... 25
2.4 Japan ............................................................... 34
2.5 Mongolia ............................................................ 47
Chapter 3 Long-Term Vision of Natural Gas Infrastructure in Northeast Asia
3.1 Natural Gas Supply and Demand Balance in Northeast Asia .... 56
3.2 Long-term Vision of Natural Gas Infrastructure in Northeast Asia .... 61
The way forward ......................................................... 66

©ERINA
<table>
<thead>
<tr>
<th>Country/Area</th>
<th>Production</th>
<th>Export</th>
<th>Production</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Siberia</td>
<td>55</td>
<td></td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>The Far East</td>
<td>95</td>
<td></td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>East Siberia + The Far East</td>
<td>150</td>
<td>PNG 50</td>
<td>162</td>
<td>PNG 50</td>
</tr>
<tr>
<td>China</td>
<td>150-180</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Natural Gas Demand in NEA

<table>
<thead>
<tr>
<th>Country/Area</th>
<th>2008</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia1) (East Siberia+Far East)</td>
<td>9.4</td>
<td>27.0</td>
<td>32.0</td>
</tr>
<tr>
<td>China</td>
<td>80.4</td>
<td>230.0</td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>34.8</td>
<td>48.7</td>
<td>57.0</td>
</tr>
<tr>
<td>Japan</td>
<td>101.1</td>
<td>82.7-114.0</td>
<td>66.0-117.1</td>
</tr>
<tr>
<td>Mongolia</td>
<td>0</td>
<td>0.4-0.6</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>225.7</td>
<td>388.8-420.3</td>
<td></td>
</tr>
</tbody>
</table>

1) without gas chemistry and technological needs
Natural Gas Flow as of 2008
We hope that this vision will be realized in the near future through the close cooperation and coordination of relevant parties.

The NAGPF would like to continue its effort to encourage and act as a catalyst for its realization.
New Organization of NAGPF-J from May 2010

Economic Research Institute for Northeast Asia (ERINA)

Northeast Asia Gas & Pipeline Forum in Japan (NAGPF-J)

President: Mr. Makoto Haya, President of Nippon Steel Engineering Co., Ltd.

Advisor to the President: Mr. Susumu Yoshida, Honorary Chairman of ERINA

Vice President: Mr. Susumu Abe, Ex-executive of Toshiba Corporation

Secretary General: Mr. Hirofumi Arai, Associate Senior Researcher of ERINA

Secretarial Group: Dr. Kazuhiko O’Hashi & Dr. Kazuaki Hiraishi
ご清聴ありがとうございました。

СПАСИБО ЗА ВНИМАНИЕ !!