Iranian Gas Industry
Characteristics & Opportunities
Contents

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- NIGC’s Capacities
- Gas Trading Opportunities
- Current and Future Gas Markets
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Top Six Natural Gas Proved Reserve Holders

- **Russia** (2) with 31.3 TCM
- **Iran** (1) with 33.8 TCM
- **Qatar** (3) with 24.7 TCM
- **Turkey** (4) with 17.5 TCM
- **USA** (5) with 9.3 TCM
- **Saudi Arabia** (6) with 8.2 TCM

Ref: BP Statistical Review of World Energy 2014
Natural Gas Production in 2013: 3370 BCM

Ref: BP Statistical Review of World Energy 2014
Natural Gas Consumption in 2013: 3348 BCM

Ref: BP Statistical Review of World Energy 2014
Summary Report of NIGC in 2014

- Natural Gas Production: 182 BCM
- Natural Gas Consumption: 172 BCM
- High pressure Gas Transmission pipelines: 36000 Km
- Gas Distribution Networks: 264000 Km
- No. of Gas Consuming Power Plants: 72
- Natural Gas Consumption for Vehicles: 6.8 BCM
- No. of Natural Gas Consuming Cities: 1027
- No. of Natural Gas Consuming Villages: 17400
- % of Natural Gas Consuming Population: 88%
- Share of Natural Gas in Fossil Fuels Basket: 66%
- Export: 9.7 BCM
- Import: 7.5 BCM
Breakdown of Iran’s Natural Gas Consumption in 2014

- Residential: 85.2 BCM; 50%
- Industrial: 31.1 BCM; 18%
- Power Plants: 36.7 BCM; 21%
- Others: 9.3 BCM; 5%
- Export: 9.7 BCM; 6%
Iran Energy Mix in 2013 (244 Mtoe)

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Quantity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>146</td>
<td>59.8%</td>
</tr>
<tr>
<td>Oil</td>
<td>92.9</td>
<td>38.1%</td>
</tr>
<tr>
<td>Hydro-Electricity</td>
<td>3.4</td>
<td>1.4%</td>
</tr>
<tr>
<td>Coal</td>
<td>0.7</td>
<td>0.3%</td>
</tr>
<tr>
<td>Nuclear Energy</td>
<td>0.9</td>
<td>0.4%</td>
</tr>
<tr>
<td>Renewables</td>
<td>0.1</td>
<td>0.0%</td>
</tr>
<tr>
<td>Others</td>
<td>170.0%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Ref: BP Statistical Review of World Energy 2014
## Current Gas Sale & Purchase Contracts

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Capacity (BCM/Y)</th>
<th>Project Status</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export</td>
<td>Turkey</td>
<td>7-10</td>
<td>In operation</td>
</tr>
<tr>
<td>Export</td>
<td>Azerbaijan</td>
<td>0.3 - 0.7</td>
<td>In operation</td>
</tr>
<tr>
<td>Export</td>
<td>Armenia</td>
<td>1.1 – 2.3</td>
<td>In operation</td>
</tr>
<tr>
<td>Import</td>
<td>Turkmenistan (first phase)</td>
<td>8</td>
<td>In operation</td>
</tr>
<tr>
<td>Import</td>
<td>Turkmenistan (second phase)</td>
<td>Up to 14</td>
<td>In operation</td>
</tr>
</tbody>
</table>
## The Finalized Gas Export Contracts

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Capacity (BCM/Y)</th>
<th>Project status</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistan</td>
<td>7.8</td>
<td>Finalized GSPA</td>
<td>2016</td>
</tr>
<tr>
<td>Iraq (phase 1)</td>
<td>9</td>
<td>Finalized GSPA</td>
<td>2015</td>
</tr>
</tbody>
</table>
Increasing Trend of Gas Exporting Potential

- Residential & Commercial Consumption
- Power Plants Consumption
- Industrial Consumption
- Exporting Potential

- Billion Cubic Meters

- Years: 2010 to 2020
# Under Negotiation Gas Export Contracts

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Capacity (BCM/Y)</th>
<th>Project Status</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>10.9</td>
<td>Negotiation</td>
<td>2017</td>
</tr>
<tr>
<td>Oman</td>
<td>10.2</td>
<td>Term sheet is signed</td>
<td>2016</td>
</tr>
<tr>
<td>Kuwait</td>
<td>3.1</td>
<td>Negotiation on term sheet</td>
<td>2017</td>
</tr>
<tr>
<td>Turkey (phase 2)</td>
<td>0.5 - 3</td>
<td>HOA is signed</td>
<td>2015</td>
</tr>
<tr>
<td>Iraq (phase 2)</td>
<td>24</td>
<td>MOU is signed</td>
<td>2017</td>
</tr>
<tr>
<td>Project Name</td>
<td>Capacity (mmton/Y)</td>
<td>Project Progress Status</td>
<td>Commencement Date</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>IRAN LNG</td>
<td>10</td>
<td>Final investment decision</td>
<td>2017</td>
</tr>
<tr>
<td>NORTH PARS</td>
<td>20</td>
<td>PDA contract assessment</td>
<td>2018</td>
</tr>
<tr>
<td>Golshan &amp; Ferdowsi</td>
<td>9</td>
<td>Under negotiation for PDA &amp; GSPA</td>
<td>2020</td>
</tr>
<tr>
<td>Gazestan</td>
<td>1</td>
<td>Under negotiation</td>
<td>2016</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Iran Natural Gas Export Options to Europe

- Pars (Persian) Pipeline
- Nabucco Pipeline
- Interconnection Turkey - Greece - Italy
- Proposed Transit Pipelines
- South Pars
- Persian Gulf
- Jask
- Turkey
- Greece
- Italy

Map showing major Russian natural gas export pipelines, potential natural gas export pipeline, gasfields, and Iran natural gas export options to Europe.
Advantages of Iranian Gas Market

- Shortest route to the large gas market.

- High potential production (about 1 TCM/Day in the next 4 years, via South Pars and other reserves development).

- Huge infrastructure for taking gas to various consumption areas inside and outside of Iran.

- Minimum capital investment.

- Possibility of export, transit and swap via pipeline to Turkey, Armenia, Iraq, Azerbaijan, Pakistan, Europe, Persian Gulf region and also via LNG to Asian and European countries.
NIGC Development Vision

- Keeping the 3rd place of world natural gas production.
- Acquiring a share of 8 to 10 percent of global gas trade.
- Becoming the leading country in natural gas technology in the (Middle East) region.
## NIGC Development Plans in Brief (by 2020)

<table>
<thead>
<tr>
<th>Metric</th>
<th>2014</th>
<th>2020</th>
<th>Growth (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Production Capacity (MMCMD)</td>
<td>700</td>
<td>1200</td>
<td>71 %</td>
</tr>
<tr>
<td>Annual Gas Production (BCMY)</td>
<td>202</td>
<td>400</td>
<td>100 %</td>
</tr>
<tr>
<td>High Pressure Transmission pipelines (km)</td>
<td>36,000</td>
<td>~ 41,000</td>
<td>14 %</td>
</tr>
<tr>
<td>No. Compressor Stations</td>
<td>76</td>
<td>~ 105</td>
<td>38 %</td>
</tr>
<tr>
<td>No. Turbo Compressors</td>
<td>257</td>
<td>~ 370</td>
<td>44 %</td>
</tr>
<tr>
<td>Gas Consuming Population (Million) (%)</td>
<td>69.5 (88%)</td>
<td>81 (98%)</td>
<td>17 %</td>
</tr>
</tbody>
</table>
The Required Infrastructures and Resources in Different Sections (by 2020)

1. New Required Infrastructures
   - Exploration and Production
     - Gas Treating
     - Gas Transmission
     - Compressor Station
     - Underground Gas Storage
     - Gas Distribution Network

2. Required Capex
   - 200 mmscm/d
   - 5000 km
   - 19 Stations
   - 115 mmscm/d
   - 3.5 Million Households

   - 21 Billion US$
   - 34 Billion US$
   - 3 Billion US$
   - 4.5 Billion US$

Total: 62.5 Billion US$
New Transmission Systems

- IGAT 6 & Export Lines to Iraq
- IGAT 7 & Export Lines to Pakistan, Oman
- IGAT 9 & export line (Europe)
- IGAT 11

Caspian Sea

IRAN

Persian Gulf
Underground Gas Storage

Projects

- **Capacity: 36 mmcm/d**
  - **Capex: 252 million US$**

- **Capacity: 20 mmcm/d**
  - **Capex: 467 million US$**

- **Capacity: 20 mmcm/d**
  - **Capex: 206 million US$**

- **Capacity: 20 mmcm/d**
  - **Capex: 990 million US$**

- **Capacity: 4.8 mmcm/d**
  - **Capex: 6 million US$**
## Underground Gas Storage Projects

<table>
<thead>
<tr>
<th>Reserve Name</th>
<th>Capacity (BCM)</th>
<th>Injection rate (MMCM/D)</th>
<th>Withdraw period (Month/y)</th>
<th>Max. withdraw rate (MMCM/D)</th>
<th>Operation date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarajeh</td>
<td>3.3</td>
<td>7</td>
<td>4</td>
<td>*9.8</td>
<td>IN OPERATION</td>
</tr>
<tr>
<td>Shourijeh</td>
<td>4.8</td>
<td>10</td>
<td>4</td>
<td>*20</td>
<td>IN OPERATION</td>
</tr>
<tr>
<td>Yurtesha</td>
<td>0.2</td>
<td>3</td>
<td>1.5</td>
<td>5</td>
<td>2017</td>
</tr>
<tr>
<td>Nasrabad</td>
<td>2</td>
<td>NA</td>
<td>NA</td>
<td>15</td>
<td>2018</td>
</tr>
<tr>
<td>Ghezel Tapeh</td>
<td>1.2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2018</td>
</tr>
</tbody>
</table>

* the given statistics is for the first phase only
During recent years two new laws have been passed to support investment in Iran’s economy:

- **Foreign investment promotion and protection act**

This new law gives strong support to investment with foreign origin in all economics sectors introducing new options and advantages as well as new legal framework in which diversified opportunities and flexible solutions are provided and many traditional restrictions have been lifted.
• **Competitive production barriers removal law**

According to competitive production barriers removal law, a new range of priorities, options and opportunities are regarded to provide private sector players with better competitive business environment while decreasing non business risks.

According to the permission issued in article “GH” of 2nd clause of the 2014-2015 budget law, investment in oil and gas saving and production development projects has been extended as a permanent article of annual budget law (up to 100 billion US$).
In 2014-2015, Ministry of Petroleum is allowed to invest in projects up to 100 billion US$ (through state companies) for:

- Increasing oil, gas, condensate and petrochemicals production capacities
- Growth in export of oil products
- Stop flaring associated gases
- Replacing oil products consumption by domestic or imported gas through contracts in forms of Buyback, BOO and BOT.
NIGC’s Welcomed Fields of Cooperation

- Foreign Investment Attraction in Development Projects
- Small Scale LNG (to provide natural gas for distant regions)
- CNG (to provide natural gas for distant regions)
- Energy Saving
- Natural Gas Conversions
- Smart Natural Gas Distribution Networks
- …
Cooperation of French Companies in Iran’s Natural Gas Industry

- **Total Co.**: Contribution to development of South Pars gas field
- **Sofregaz Co.**: Tehran gas network & Sarajeh and Yurtesha underground gas storage design
- **Schlumberger**: Contribution to development of South Pars gas field
- **IFP**: Scientific and educational cooperation
THANKS FOR YOUR KIND ATTENTION!