Issues related to deployment of SMR: Bangladesh Perspective

Md. Rakibul Hasan
Senior Engineer
Center for Research Reactor
Atomic Energy Research Establishment
Savar, Dhaka

Bangladesh Atomic Energy Commission
Email: rakibmist@gmail.com / rakibmist@baec.gov.bd
Why NPP is Important in Bangladesh perspective?
About Bangladesh

Full name: People's Republic of Bangladesh

Population: 166 million (9th in world) (July 2014)

Area: 147,570 sq km

Population Density: 1034 per sq km (4th in world)

Major language: Bengali

Education Rate: 60%

Major Profession: Agriculture, 50% GDP

Main exports: Garments, fish, jute goods, leather products
### Present Power Situation

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTALLED CAPACITY</td>
<td>12,780 MW</td>
</tr>
<tr>
<td>AVAILABLE GENERATION CAPACITY</td>
<td>12,185 MW</td>
</tr>
<tr>
<td>PEAK DEMAND</td>
<td>10,200 MW</td>
</tr>
</tbody>
</table>

- Presently, about 70% people has access to electricity in the country

* Bangladesh Power Development Board (BPDB)
Present Power Situation

Fuel consumption pattern of Power Generation.

Energy and Power Sector of Bangladesh completely natural gas based mono fuel dependence
The power generation targets for the Six Five Year Plan emerge from the targets of the Perspective Plan: 2010 – 2021

By the year 2013: 8,500 MW
By the year 2015: 11,500 MW
By the year 2021: 20,000 MW (Electricity for all)
By the year 2030: 33,500 MW

* Bangladesh Power Development Board
   (BPDB)
## Current & Future plans for NP development

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Current (%)</th>
<th>2021 (%)</th>
<th>2030 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>64</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>Coal</td>
<td>2</td>
<td>53</td>
<td>38</td>
</tr>
<tr>
<td>Oil</td>
<td>26</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Hydro</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Nuclear</strong></td>
<td><strong>0</strong></td>
<td><strong>10</strong></td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>Renewable/Imported</td>
<td>5</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>
Why SMR is Important in Bangladesh perspective?
Why? ....

- Densely Populated cities
- High Energy demand
- Remote Areas
Law that provides authority for nuclear security oversight

- Bangladesh Atomic Energy Regulatory Act (BAER Act)-2012
- NPP Act
Nuclear security regulator, regulations

Bangladesh Atomic Energy Regulatory Authority (BAERA) is responsible for that
Licensing Procedure

- justification
- Application
- Fee
- Safety & protection
- Adequate financial resource
- Trained Human resource
- compliance
Institutional Requirement

• International Co-operation
• Manpower development
• Financial
What we need in SMR

• Simplicity in design
• Mass production capability
• Lower Siting coast
• Co-generation capability
• Unattended Remote Operation ability
• Easy Re-fuelling
What Govt. thinking

- Firstly Focus on RNPP
- After that PPP based SMR and others

Some Big companies of Bangladesh are very much interested to establish SRs in PPP basis
Conclusion

To gain broad acceptance designers should strive to achieve high degree of public comfort.
Thank you for your kind attention