The nuclear industry's immediate priority is the successful delivery of the current 16GW new build programme using proven technology. Political and industry support has grown for Small Modular Reactors (SMRs) in recent years, with the Government moving closer towards its own programme.

The Nuclear Industry Association believes there is potential for SMRs as a complementary technology to larger reactors, and a viable proposition for future deployment. As one of the key drivers in the Nuclear Industrial Strategy (2013), they have the potential to help the UK meet its energy security and climate change objectives, whilst providing significant potential benefit for the UK civil nuclear industry.

As a smaller unit, SMRs could have the potential to help tackle difficult challenges such as financing, infrastructure and siting; whilst maintaining the UK's position as a ‘top table’ nuclear nation.

Nuclear programmes are long term, and the planning needs to start as soon as possible. The Government began the early stages of formalising a UK SMR programme following the launch of a competition in March 2016.

PROGRESS TO DATE

Since 2014, interest in potential SMR development has gained momentum across Government. Following the feasibility study in 2014, the 2015 Autumn Statement included a £250 million nuclear R&D provision, including an SMR programme. SMRs have since become a hot topic within the energy sector, Whitehall and across both sides of the political divide.

The Government is drafting a roadmap on next steps, due to be released for this year’s Autumn Statement, including Technical Economic Assessment (June 2015 - Autumn 2016), Phase One Competition (March 2016 - Autumn 2016) and an SMR Roadmap (Autumn Statement 2016). There is a tentative Generic Design Assessment slot for one SMR, which could start in 2017.

WHAT ARE SMRs?

- They produce less than 300MWe
- Manufactured in a factory and transported to the site final for assembly
- Deployable within 10-15 years
TECHNOLOGY OPTIONS

International collaboration is the most likely option for to deliver a UK SMR. The following companies are currently developing designs:

<table>
<thead>
<tr>
<th>Design</th>
<th>Vendor Company</th>
<th>Type</th>
<th>Country</th>
<th>MWe per Unit</th>
</tr>
</thead>
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<tr>
<td>NuScale</td>
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<td>PWR</td>
<td>USA</td>
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<td>PWR</td>
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<td>UK SMR</td>
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<td>Moltex Energy</td>
<td>MSR</td>
<td>UK</td>
<td>150</td>
</tr>
</tbody>
</table>

PWR = Pressurised Water Reactor, MSR = Molten Salt Reactor

WHY SHOULD THE UK DEVELOP SMRs?

Help the UK reach its carbon reduction targets
The potential global SMR market is valued at £250–400 billion by 2035
UK has the capability to produce most if not all of the SMR modules, creating high quality jobs in manufacturing and the supply chain, which can also lead to global export potential
Increase security of supply, decreasing the UKs dependency on energy imports

WHAT ARE THE CHALLENGES?

Development for any leading SMR design is estimated at £0.5–1 billion over a seven to 10 year period
Technology option(s) must be capable of transferring Intellectual Property to the UK
One space tentatively reserved on the Generic Design Assessment process for a SMR, subject to progress of policy development

NEXT STEPS

Ministers should clarify their key objectives from the SMR competition
Clarification from Government on whether a site assessment will be required for future SMR sites, and timescales for its implementation
Government should launch the SMR Roadmap in the Autumn, as mentioned in the 2016 budget
Phase Two of the competition should start in early 2017 to maintain investor confidence