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**Supplementary information**

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**On the brink of a new era in nuclear fusion  
R&D**

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# Supplementary Information

## On the brink of a new era in nuclear fusion R&D

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At least nine DEMO concepts are at various stages of development in China, Europe, Japan, Russia, South Korea, the UK, and the USA, with target completion dates ranging between 2025 and 2055. These concepts are based on a variety of fusion technologies and sources of funding, including from governments, venture capital, and public-private partnerships. The UK is currently the country projected to host the greatest number of DEMOs (three), and each of these under a different financing scheme (public, private and public-private). Private sector companies are trying to fast-track fusion energy by developing DEMOs based on alternative confinement technologies (such as General Fusion), or developing concepts based on established approaches like tokamak designs and engineering, but incorporating new technologies such as high temperature superconductors (such as Commonwealth Fusion Systems and Tokamak Energy Ltd). This list may not be exhaustive.

| Host Country | Organization                     | Plant's Name | Location                  | Technology                                                                              | Timeline                 | Source of funding |
|--------------|----------------------------------|--------------|---------------------------|-----------------------------------------------------------------------------------------|--------------------------|-------------------|
| China        | Chinese Consortium               | CFETR        | Hefei, China              | Magnetic Confinement/Conventional Tokamak                                               | May be completed by 2040 | Public            |
| EU           | Eurofusion                       | EU-DEMO      | To be decided             | Magnetic Confinement/Conventional Tokamak                                               | May be completed by 2050 | Public            |
| Japan        | Japanese Consortium              | JA-DEMO      | To be decided             | Magnetic Confinement/Conventional Tokamak                                               | May be completed by 2050 | Public            |
| South Korea  | Korea Institute of Fusion Energy | K-DEMO       | To be decided             | Magnetic Confinement/Conventional Tokamak                                               | May be completed by 2050 | Public            |
| Russia       | Russian Consortium               | DEMO-RF      | To be decided             | Magnetic Confinement/Conventional Tokamak                                               | May be completed by 2055 | Public            |
| USA          | Commonwealth Fusion Systems      | ARC          | To be decided             | Magnetic Confinement/Conventional Tokamak with high temperature superconducting magnets | May be completed by 2035 | Private           |
| UK           | General Fusion (Canada)          | FDP          | UKAEA's Culham Campus, UK | Magnetized Target Fusion                                                                | May be completed by 2025 | Public-Private    |
|              | Tokamak Energy Ltd               | ST-E1        | To be decided             | Magnetic Confinement/Spherical Tokamak with high temperature superconducting magnets    | May be completed by 2030 | Private           |
|              | UK Atomic Energy Authority       | STEP         | To be decided             | Magnetic Confinement/Spherical Tokamak                                                  | May be completed by 2040 | Public            |

Table 1: DEMO concepts in development across the world